D 101.11:11-6625-496-12
TM 11-6625-496-12, Operator...

TM 11-6625-496-12

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

TEST SET, RADIO AN/VRM-1

This copy is a reprint which includes current pages from Changes 1 through 5.

HEADQUARTERS, DEPARTMENT OF THE ARMY
12 JULY 1962

A91009576A

TECHNICAL MANUAL

Operator and Organizational Maintenance Manual
TEST SET, RADIO AN/VRM-1

TM 11-6625-496-12
CHANGES No. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., *24 April 1963*

TM 11-6625-496-12, 12 July 1962, is changed as follows:

Page 3. Delete paragraphs 2 and 3 and substitute:

2. Index of Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment. DA Pam 310-4 is a current index of technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders that are available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc.) and the latest changes and revisions of each equipment publication.

3. Forms and Records

a. Reports of Maintenance and Equipment Improvement Recommendations. Use equipment forms and records in accordance with instructions in TM 38-750.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army, NAVASANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

c. Comments on Manual. Forward all comments on this publication direct to: Commanding Officer, U.S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, N.J. DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manuals 7, 8 or 9) will be used.

Page 21. Delete paragraph 18 and substitute:

18. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is operable.

a. Systematic Care. The procedures given in paragraphs 18.1, 18.2, and 18.3 cover the systematic care essential to proper upkeep and operation of the equipment. The cleaning operations (par. 18.3) should be performed once a day. If the equipment is not used daily, the cleaning operations must be performed before operation after any extended shutdown. The other items must be checked before the equipment is placed into operation after shutdown, during operation, or after the equipment is turned off, as specified in the applicable paragraphs.

b. Daily Maintenance Service and Inspection. The daily maintenance service and inspection chart (par. 18.1) outlines inspections to be made daily and under special conditions (*c* below). The inspections are made to determine combat serviceability; that is, to determine that the equipment is in good general (physical) condition, in good operating condition, and likely to remain combat serviceable. To assist operators in determining and maintaining combat serviceability, the chart indicates what to inspect, how to inspect, and what the normal conditions are; the *References* column lists the paragraph or figure that contains additional information. If the defect cannot be remedied by the operator, a higher echelon of repair is required. Records and reports of

these inspections must be kept in accordance with TM 38–750.

c. Special Conditions. The daily maintenance service and inspection must also be performed when the equipment is originally put into use and when the equipment is put into use after having been stored.

18.1. Daily Maintenance Service and Inspection Chart

Item No.	Procedure		References
	Item	Normal indication or result	
1	SET (EXTERIOR): Inspect the equipment for:		
	a. Completeness	*a.* Equipment is complete	*a.* Appx II.
	b. Proper installation	*b.* Equipment is properly installed	*b.* Par. 12.
	c. Cleanliness	*c.* Equipment is clean and dry; free of grease, dirt, rust, corrosion, and fungus.	*c.* Par. 18.2.
2	PUBLICATIONS: Make sure that all pertinent publications are available.	All pertinent publications are complete, in usable condition, and without missing pages.	Appx I.
4	COVER LATCHES AND COVER GASKET: Check cover latches for proper operation and cover gasket for damage.	Cover latches are not loose and hold cover tightly seated. Cover gasket is clean, flexible, and apparently in good condition.	Fig. 3.
5	INDICATOR LAMPS AND FUSE CAP: Check indicator lamps and fuse cap for damage and firm seating.	Indicator lamps and fuse cap are firmly seated and undamaged.	Fig. 12.
6	CX–7899/VRM–1 AND TEST PROBE: Check test probe and CX–7899/VRM–1 for completeness, damage, cuts, fraying, and deterioration.	Cables are complete and undamaged	Figs. 2 and 3.
7	SELECTOR AND ON–OFF SWITCHES: Check selector and ON–OFF switches for proper operation.	Selector switch detents at each position and its knob does not rub on front panel. ON–OFF switch operates properly.	Fig. 6.
8	FUSES: Check for proper fuses	Fuse in use and spare fuse are of the indicated value and located as follows:	
		a. Fuse in use is in fuseholder on front panel: 1 ea 0.500 amp.	*a.* Par. 21.
		b. Spare fuse is secured in retainer; 1 ea 0.500 amp.	*b.* Fig. 3.
9	SPARE LAMP AND SPARE TEST PROBE TIP: See that spare lamp and spare test probe tip are in retainers and are in good condition.	Spare lamp and spare test probe tip are in good condition and are secured in retainers.	Fig. 3.
10	SET: Perform the operational check.	All indications in the operational checklist are normal.	Par. 20.

18.2. Cleaning

Inspect the exterior surfaces of the TS–1777/VRM–1, the interior of its cover, the operating instruction plates, and the front panel controls for dust, dirt, grease, and fungus.

a. Remove dust and loose dirt with a clean soft cloth.

Warning: **Cleaning compound is flammable and its fumes are toxic. Provide adequate**

ventilation. ***Never*** **use the cleaning compound near a flame.**

b. Remove grease, fungus and ground-in dirt from the case, cover, and cables (fig. 2); use a cloth dampened (not wet) with cleaning compound.

c. Clean the front panel, front panel controls, and the operating instruction plates (fig. 3); use a soft clean cloth. If it is difficult to remove the dirt, use mild soap and water.

d. Remove dust from the cable connectors (fig. 2) and the POWER jack (fig. 6) with a brush.

Page 23. Delete figure 11.

Page 25. Delete paragraph 24 and substitute

24. Preventive Maintenance

a. Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operational capability. Preventive maintenance is the responsibility of all echelons concerned with the equipment and includes the inspection, testing, and repair or replacement of parts, subassemblies, or units that inspection and tests indicate would probably fail before the next scheduled periodic service. Preventive maintenance service and inspections of Test Set, Radio AN/VRM–1 at second echelon level are made at quarterly intervals unless otherwise directed by the commanding officer.

b. Refer to paragraph 2 for maintenance forms and records information. Instructions for the use of maintenance forms and records to be maintained on this equipment are contained in TM 38–750.

c. Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to applicable cleaning and refinishing practices specified in TM 9–213, Painting Instructions for Field Use.

24.1. Quarterly Maintenance

Quarterly maintenance on Test Set, Radio AN/VRM–1 will be scheduled with the requirements of TM 38–750. All deficiencies or shortcomings will be recorded, and those not corrected during the inspection and service will be immediately reported to higher echelon. Use the forms and procedures specified in TM 38–750. Equipment that has a deficiency that cannot be corrected by second echelon personnel should be deadlined in accordance with TM 38–750. Perform all the services listed in the quarterly maintenance and inspection chart (par. 24.2) in the sequence listed. Whenever a *Normal indication or result* is not observed, take corrective action in accordance with the paragraph listed under *References*.

24.2. Quarterly Maintenance Service and Inspection Chart

Item No.	Procedure		References
	Item	Normal indication or result	
1	SET (EXTERIOR): Inspect the equipment for:		
	a. Completeness	*a.* Equipment is complete	*a.* Appx II.
	b. Proper installation	*b.* Equipment is properly installed	*b.* Par. 12.
	c. Cleanliness	*c.* Equipment is clean and dry; free of grease, dirt, rust, corrosion, and fungus.	*c.* Par. 18.2.
	d. Preservation	*d.* Painted surfaces are free of spots, rust, and corrosion.	*d.* Par. 24c.
2	PUBLICATIONS: Make sure all pertinent publications are available.	*a.* All pertinent publications are complete, in usable condition, and without missing pages.	*a.* Appx I.
		b. All Changes pertinent to the equipment are on hand.	*b.* DA Pam 310–4.
3	MODIFICATION WORK ORDERS: Check DA Pam 310–4 to determine if new applicable MWO's have been published.	All urgent MWO's have been applied to the equipment. All routine MWO's have been scheduled.	DA Pam 310–4.

A91009576A

24.2. Quarterly Maintenance Service and Inspection Chart—Continued

Item No.	Procedure		References
	Item	Normal indication or result	
4	COVER LATCHES AND COVER GASKET: Check cover latches for proper operation and cover gasket for damage.	Cover latches are not loose and hold cover tightly seated. Cover gasket is clean, flexible, and apparently in good condition.	Fig. 3.
5	INDICATOR LAMPS AND FUSE CAP: Check indicator lamps and fuse cap for damage and firm seating.	Indicator lamps and fuse cap are firmly seated and undamaged.	Fig. 12.
6	CX-7899/VRM-1 AND TEST PROBE: Check test probe and CX-7899/VRM-1 for completeness, damage, cuts, fraying, and deterioration.	Cables are complete and undamaged	Figs. 2 and 3.
7	SELECTOR AND ON-OFF SWITCHES: Check selector and ON-OFF switches for proper operation.	Selector switch detents at each position and its knob does not rub on front panel. ON-OFF switch operates properly.	Fig. 6.
8	FUSES: Check for proper fuses	Fuse in use and spare fuse are of the indicated value and located as follows:	
		a. Fuse in use is in fuseholder on front panel: 1 ea 0.500 amp.	a. Par. 21.
		b. Spare fuse is mounted inside equipment cover: 1 ea 0.500 amp.	b. Fig. 3.
9	SPARE LAMP AND SPARE TEST PROBE TIP: See that spare lamp and spare test probe tip are in retainers and are in good condition.	Spare lamp and spare test probe tip are in good condition and are secured in retainers.	Fig. 3.
10	SET: Perform the operational check.	All indications in the operational checklist are normal.	Par. 20.
11	SET (INTERIOR): Inspect equipment for:		
	a. Cleanliness	a. Operating instruction plates and interior of cover and case are clean and dry; free of grease, dirt, rust, corrosion, and fungus.	a. Pars. 18.2 and 28.1.
	b. Preservation	b. Painted surfaces are free of spots, rust, and corrosion.	b. Par. 24c.
	c. Front panel gasket condition	c. Front panel gasket is clean, flexible, and apparently in good condition.	None.
12	SET: Perform the equipment performance check.	All indications in the equipment performance checklist are normal.	Par. 26.

Page 26. Delete figure 13.

Page 27. Delete figure 14.

Page 30. Add paragraph 28.1 after paragraph 2.

28.1 Removal and Replacement of Front Panel and Chassis

a. Removal.

(1) Loosen the eight captive screws (fig. 3) that secure the front panel to the case.

(2) Carefully lift the front panel and chassis out of the case. Be careful not to damage the front panel gasket.

b. Replacement.

(1) Place the front panel gasket in position on the case.

(2) Place the front panel and chassis over the case (test jack A next to the cable storage areas (fig. 3)). Carefully lower the front panel and chassis into the case chassis well.

(3) Make sure that the captive screws on the front panel line up with the holes in the gasket and the screw holes in the case. Tighten the eight captive screws.

Page 33, appendix I. Add the following:

TM 38–750 The Army Equipment Record System and Procedures.

By Order of the Secretary of the Army:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:
DASA (6)
USASA (2)
CNGB (1)
CofEngrs (1)
TSG (1)
CSigO (5)
CofT (1)
USA CD Agcy (1)
USCONARC (5)
USAMC (5)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (3)
OS Base Comd (2)
LOGCOMD (2)
USAECOM (5)
USAMICOM (3)
USASCC (4)
MDW (1)
Armies (2)
Corps (2)
USA Corps (3)
USATC AD (2)
USATC Engr (2)
USATC Inf (2)
USATC Armor (2)
Instls (2) except
Ft Monmouth (63)
Svc College (2)
Br Svc Sch (2)
GENDEP (OS) (2)
Sig Dep (OS) (12)
Sig Sec, GENDEP (5)
Army Dep (2) except
Ft Worth (8)
Lexington (12)
Sacramento (28)
Tobyhanna (12)
USA Elct RD Actv, White Sands (13)
USA Elct RD Actv, FT Huachuca (2)
USA Trans Tml Comd (1)
Army Tml (1)
POE (1)
USAOSA (1)
AMS (1)
WRAMC (1)
AFIP (1)
Army Pic Cen (2)
USA Mbl Spt Cen (1)
USA Elct Mat Agcy (25)
Chicago Proc Dist (1)
USARCARIB Sig Agcy (1)
Sig Fld Maint Shop (3)
JBUSMC (2)
Units org under fol TOE:
Two copies each UNOINDC:
11–7
11–16
11–57
11–98
11–117
11–155
11–157
11–500 (AA–AC) (4)
11–557
11–587
11–592
11–597

NG: State AG (3).

USAR: None.

For explanation of abbreviations used, see AR 320–50.

Changes in force: C 1 and C 2

TM 11-6625-496-12
*C 2

CHANGE
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *14 July 1965*

Organizational Maintenance Manual

TEST SET, RADIO AN/VRM-1, INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

TM 11-6625-496-12, 12 July 1962, is changed as follows:

Change the title of the manual to: ORGANIZATIONAL MAINTENANCE MANUAL TEST SET, RADIO AN/VRM-1, INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST.

Note: The parenthetical reference to previous changes (*example:* "page 1 of C 1") indicates that pertinent material was published in that change.

Page 3, paragraph 3 (page 1 of C 1). Delete subparagraph *c* and substitute:

c. Reporting of Equipment Manual Improvements. The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form will be completed using, pencil, pen, or typewriter and will be forwarded direct to Commanding General, U. S. Army Electronics Command, ATTN: AMSEL-MR-(NMP)-MA, Fort Monmouth, N.J. 07703.

Page 11, paragraph 14, fourth sentence. After the fourth sentence, insert the following: If instructions direct the substitution of more than one module to correct the trouble, replace all the suspected modules with new modules and then repeat the test. If the action corrects the trouble, replace the new modules, one at a time, with the original modules until the defective module or modules are isolated and are the only one (or ones) replaced. If replacement of a suspected module with a new module does not correct the trouble, replace the original module (or modules) and request higher level maintenance of the equipment

Page 13, figure 8, chart 4, test 11. Change switch position A to 19.

Page 15, paragraph 14*b*, chart, Procedure column. Make the following changes:

Step 4. Change the first sentence to read: Replace A2100; reinstall A5000 and repeat step 3.

Step 5, second line. Add after given in: *c.*

Step 6. Make the following changes:

Second line. Add after given in: *e.*

Fourth line. Add after given in: *c.*

Page 17, paragraph 14*e*, chart, Procedure column, step 1. Change second line to read: Stop test; A3000 assembly operable.

Page 33, appendix I (page 5 of C1). Delete TM 9-2851 and TM 11-6625-496-20P in their entirety and add the following:

SB 11-573	Painting and P servation Supplies Available for Field Use for Electronic Command Equipment
TB SIG 364	Field Instructions for Painting and Preserving Electrical Commercial Equipment
TM 9-213	Painting Instructions for Field Use

Page 34, appendix II. Delete and substitute:

* This change supersedes TM 11-6625-496-20P, 20 July 1962.

APPENDIX II

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. General

This appendix lists items supplied for initial operation and for running spares. The list includes tools, parts, and material issued as part of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

2. Columns

Columns are as follows:

a. Federal Stock Number. This column lists the 11-digit Federal stock number.

b. Designation by Model. Not used.

c. Description. Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.

d. Unit of Issue. The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

e. Expendability. Nonexpendable items are indicated by NX. Expendable items are not annotated.

f. Quantity Authorized. Under "Items Comprising an Operable Equipment," the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spare Items" the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

g. Illustration. The "Item No." column lists the reference designations that appear on the part in the equipment. These same designations are also used on any illustrations of the equipment. The numbers in the "Figure No." column refer to the illustrations where the part is shown.

SECTION II. FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	USABLE ON CODE	EXP	QTY AUTH	ILLUSTRATION FIGURE NO.	ILLUSTRATION ITEM NO.
6625-892-5542		TEST SET, RADIO AN/VRM-1: To detect faulty modules of Radio Sets AN/VRC-12 AN/VRC-43 thru 49; 8-1/2 in lg X 7-1/16 in w X 6-1/2 in h, 1 ea TEST SET, RADIO TS-1777/VRM-1; Cable Assy CX-7899/VRM-1. w/carrying case: Sig dwg SC-DL-416100		NX	1	2	
		ITEMS COMPRISING AN OPERABLE EQUIPMENT					
ORD THRU AOC		TECHNICAL MANUAL TM 11-6625-896-12			2		
6625-892-5543		TEST SET, RADIO TS-1777/VRM-1: type of tests; voltage tests: Audio signal or Noise Level: intermediate freq signal or Noise Level and sensitivity; 8-1/2 in lg X 7-1/16 in X 6-1/2 in o/g, Sig dwg SM-D-416104 (Not installed) (Not mounted)		NX	1	2	
6625-439-8762		CABLE ASSEMBLY, SPECIAL PURPOSE ELECTRICAL, BRANCHED CX-7899/VRM-1: interconnecting pwr. cable for/oper. TS-1777/VRM-1 and the item under test from the same pwr. supply, Sig dwg SM-D-416188 (Not installed) (Not mounted)		NX	1	2	
		MUMMING SPARE ITEMS					
5920-281-0224		FUSE, CARTRIDGE: 0.500 amps; 250 V max MIL type MS 900078-7-1 (Not installed) (Mounted in equip)			1	2	
6680-155-7836		LAMP, INCANDESCENT: 0.04 amps, 28 Volts, MIL type MS 25237-327 (Not installed) (Not mounted)			1	2	
6625-329-3312		TIP, TEST PROBE: 0.750 in lg X 0.285 in w X 0.250 in h, Sig dwg SM-D-416106 (Not installed) (Mounted in equip)			1	3	

Page 36. Delete appendix III and substitute:

APPENDIX III

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. General

a. This appendix assigns maintenance functions to be performed on components, assemblies, and subassemblies by the lowest appropriate maintenance category.

b. Columns in the maintenance allocation chart are as follows:

(1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the component. Components, assemblies, and subassemblies are listed in top-down order. That is, the assemblies which are part of a component are listed immediately below that component, and subassemblies which are part of an assembly are listed immediately below that assembly. Each generation breakdown (components, assemblies, or subassemblies) is listed in disassembly order or alphabetical order.

(2) *Maintenance function.* This column indicates the various maintenance functions allocated to the categories.

(*a*) *Service.* To clean, to preserve, and to replenish lubricants.

(*b*) *Adjust.* To regulate periodically to prevent malfunction.

(*c*) *Inspect.* To verify serviceability and detect incipient electrical or mechanical failure by scrutiny.

(*d*) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

(*e*) *Replace.* To substitute serviceable components, assemblies, or subassemblies, for unserviceable components, assemblies, or subassemblies.

(*f*) *Repair.* To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

(*g*) *Align.* To adjust two or more components of an electrical system so that their functions are properly synchronized.

(*h*) *Calibrate.* To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.

(*i*) *Overhaul.* To restore an item to *completely serviceable* condition as prescribed by serviceability standards. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.

(*j*) *Rebuilt.* To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or replacement of worn or unserviceable elements using original manufacturing tolerances and/or speci-

fications and subsequent reassembly of the item.

(3) *Operator, organization, direct support, general support, and depot.* The symbol X indicates the categorys responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Categories higher than those marked by X are authorized to perform the indicated operation.

(4) *Tools required.* This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.

(5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding column.

c. Columns in the allocation of tools for maintenance functions are as follows:

(1) *Tools required for maintenance functions.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

(2) *Operator, organization, direct support, general support, and depot.* The dagger (†) symbol indicates the category normally allocated the facility.

(3) *Tool code.* This column lists the tool code assigned.

2. Maintenance by Using Organizations

When this equipment is used by Signal services organizations organic to theater headquarters, or communication zones to provide theater communications, those maintenance functions allocated up to and including general support are authorized to the organization operating this equipment.

SECTION II. MAINTENANCE ALLOCATION CHART

PART OR COMPONENT	MAINTENANCE FUNCTION	ECHELON					TOOLS REQUIRED	REMARKS
		O/C	O	DS	GS	D		
TEST SET, RADIO AN/VRM-1	repair	X						Limited to replacement of running spares and pluck out cable assembly. Tools normally furnished user to perform assigned mission.
					X		1 thru 16	
	rebuild					X	1 thru 16	
TEST SET, RADIO TS-1777/VRM-1	replace	X						
	repair	X						Limited to replacement of running spare and pluck out cable assembly. Tools normally furnished user to perform assigned mission.
					X		1 thru 16	
	rebuild					X	1 thru 16	
CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED CX-7899/VRM-1	replace	X						
	repair				X		1 thru 16	Tools normally furnished user to perform assigned mission.
LEAD, TEST: (PROBE)	replace				X		1 thru 16	
	repair	X						Limited to replacement of Probe Tip and Ground Clip Assembly. Tools normally furnished user to perform assigned mission.
MODULES	replace				X		1 thru 16	
	overhaul					X	1 thru 16	
TEST SET SUBASSEMBLY: (ROTARY SWITCH)	replace				X		1 thru 16	S7902
	repair				X		1 thru 16	Replacement of resistors on switch.

VRM1 COV

SECTION III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	ECHELON						TOOL CODE	REMARKS
	O/C	O	DS	GS	D			
AN/VRM-1 (continued)								
AMPLIFIER, AM-3495/U				†	†		1	
AUDIO OSCILLATOR TS-382/U				†	†		2	
CABLE ASSEMBLY CX-4720/VRC				†	†		3	Not a test item. To be furnished by shop support.
FREQUENCY METER AN/USM-26				†	†		4	
MOUNTING MT-1029/VRC				†	†		5	Not a test item. To be furnished by shop support.
MULTIMETER, METER ME-26/U				†	†		6	
MULTIMETER, TS-352				†	†		7	
POWER SUPPLY PP-2309/U				†	†		8	
POWER SUPPLY, PP-3514/U				†	†		9	
RF SIGNAL GENERATOR AN/URM-25				†	†		10	
SIGNAL GENERATOR AN/USM-44				†	†		11	
TOOL KIT, RADAR AND RADIO REPAIRMAN TK-87/U				†	†		12	
TOOL KIT, SUPPLEMENTARY, RADAR AND REPAIR TK-88/U				†	†		13	
VOLTMETER, AN/URM-145				†	†		14	
VOLTMETER, METER ME-30/U				†	†		15	
VOLTMETER TS-443/U				†	†		16	

Page 39. Add appendix IV.

APPENDIX IV

ORGANIZATIONAL REPAIR PARTS LIST

Section I. INTRODUCTION

1. General

a. This manual lists the quantities of repair parts authorized for organizational maintenance and constitutes a basis of requisitioning when the major item of equipment is authorized to the organization. These equipments are issued on the basis of allowances prescribed in equipment authorization tables and other documents which are a basis of requisitioning. This equipment is combat-essential.

b. Columns are as follows:

(1) *Federal stock number.* This column lists the 11-digit Federal stock number.

(2) *Designation by model.* Not used.

(3) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description.

(4) *Unit of issue.* The unit of issue is each unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

(5) *Expendability.* Nonexpendable items are indicated by NX. Expendable items are not annotated.

(6) *Quantity incorporated in unit.* This column lists the quantity of each part found in a given assembly, component, or equipment.

(7) *Organizational.* The quantities indicated in this column are maximum levels of repair parts authorized to be kept on hand by units performing organizational maintenance. The quantities are based on 100 equipments to be maintained for a 15-day period.

(8) *Illustration.* The "Item No." column lists the reference designations that appear on the part in the equipment. These same designations are also used on any illustrations of the equipment. The numbers in the "Figure No." column refer to the illustrations where the part is shown.

2. Additional Repair Parts Authorization

An asterisk indicates that an item is not authorized for stockage but if required, may be requisitioned for immediate use only.

3. Requisitioning Information

a. The allowance factors are based on 100 equipments. In order to determine the number of parts authorized for the specific number of equipments supported, the following formula will be used and carried out to two decimal places.

$$\text{Specific number of equipments supported} \times \frac{\text{allowance factor}}{100} = \text{Number of parts authorized.}$$

b. Fractional values obtained from above computation will be rounded to whole numbers as follows:

(1) When the total number of parts authorized is less than one, the quantity authorized will be one.

(2) For all values above one, fractional values below 0.5 will revert to the next lower number, fractional values of 0.5 or larger will advance to the next higher whole number.

c. The number of parts authorized, determined after application of *a* and *b* above, represent one prescribed load for a 15-day period. The items and computed quantities thereof must be on hand or on order at all times.

d. Major commanders will determine the number of prescribed loads organizational units

will carry. Unit and organizations authorized additional prescribed loads will utilize the formula explained in *a* above but will multiply the number of equipments supported by the number of authorized prescribed loads before completing the formula. Fractional values will be rounded to whole numbers as described above.

SECTION. II. ORGANIZATIONAL FUNCTIONAL PARTS LIST

FEDERAL STOCK NUMBER	DESIGNATION BY MODEL	DESCRIPTION	UNIT OF ISSUE	EXP	QTY IN UNIT	MAINT ORG ALLOW.	ILLUSTRATION FIGURE NO. 13-	ILLUSTRATION ITEM NO.
6625-892-5542		TEST SET, RADIO AN/VRM-1: go-or-no go tester; to detect faulty modules of RADIO SETS AN/VRC-12; AN/VRC-43 thru 49; 8-1/2 in lg X 7-1/16 in X 6-1/2 inch; Sig dwg SC-DL-416100		NX			1	
6625-329-3382		BRACKET, PROBE TIP ASSEMBLY: 0.812 in lg X 0.313 in w X 0.190 in o/a; Sig dwg SM-B-416138			1	(1.9)	1	1
6625-439-8762		CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED CX-7899/VRM-1: interconnecting power cable and the item under test. 5 ft 4 in lg o/a, Sig dwg SM-D-416188		NX	1	(1.0)	1	2
6625-889-0787		CABLE ASSEMBLY, SPECIAL PURPOSE ELECTRICAL: (ground connector assy) 7-1/2 in lg o/a, termination one end clip; Sig dwg SM-C-416209			1	(1.0)	1	3
5920-543-8699		CAP, ELECTRICAL: (fuse cap) 0.750 in lg X 0.937 in dia 7-1/16 in 20 thd; Littelfuse part #342006SA2			1	*	2	1
5920-281-0824		FUSE, CARTRIDGE: 0.500 amps, 250 V max; 1.250 in lg X 0.250 in dia; MIL type MS70078-7-1			1	(12.5)	2	2
6210-857-5322		LENS, INDICATOR LIGHT: (RED) 0.609 in dia X 0.625 in h o/a 0.5000 in 20 thd. 0.187 in lg; MIL type 177971			1	(1.0)	2	4
6210-857-5323		LENS INDICATOR LIGHT: (GREEN) 0.609 in dia X 0.625 in h; 0.5000 in thd; ''Dialight'' MIL type 177-972			1	(1.0)	2	5
5330-171-8059		PACKING, PREFORMED: 0.623 in id X 0.845 in od X 0.094 in h o/a; Littlefuse part 901-58			1	*	2	6
6240-196-4491		LAMP INCANDESENT: MIL type 330			2	(1.0)	2	3
6625-857-5278		PLATE, INSTRUCTION (chart 1, 2 and 3) 7.125 in lg X 5.225 in w X 1.562 in thk o/a; Sig dwg SM-C-416143			1	(1.9)	1	4
6625-857-5277		PLATE INSTRUCTION: 7.125 in lg X 5.225 in w X 0.562 in thk o/a; Sig dwg SM-C-416147			1	(1.9)	1	5
5305-558-4888		SCREW, MACHINE: 4-40 size thd; 0.250 in lg; MIL type MS35223-13			1	*	1	6
6625-329-3385		STRIKE: 0.688 in lg X 0.250 in w X 0.313 in l/o o/a; Sig dwg SM-C-416145			1	*	1	7
6625-329-3312		TIP, TEST PROBE: 0.750 in lg X 0.285 in w X 0.250 in h o/a; Sig dwg SM-B-416106			1	(1.0)	1	8

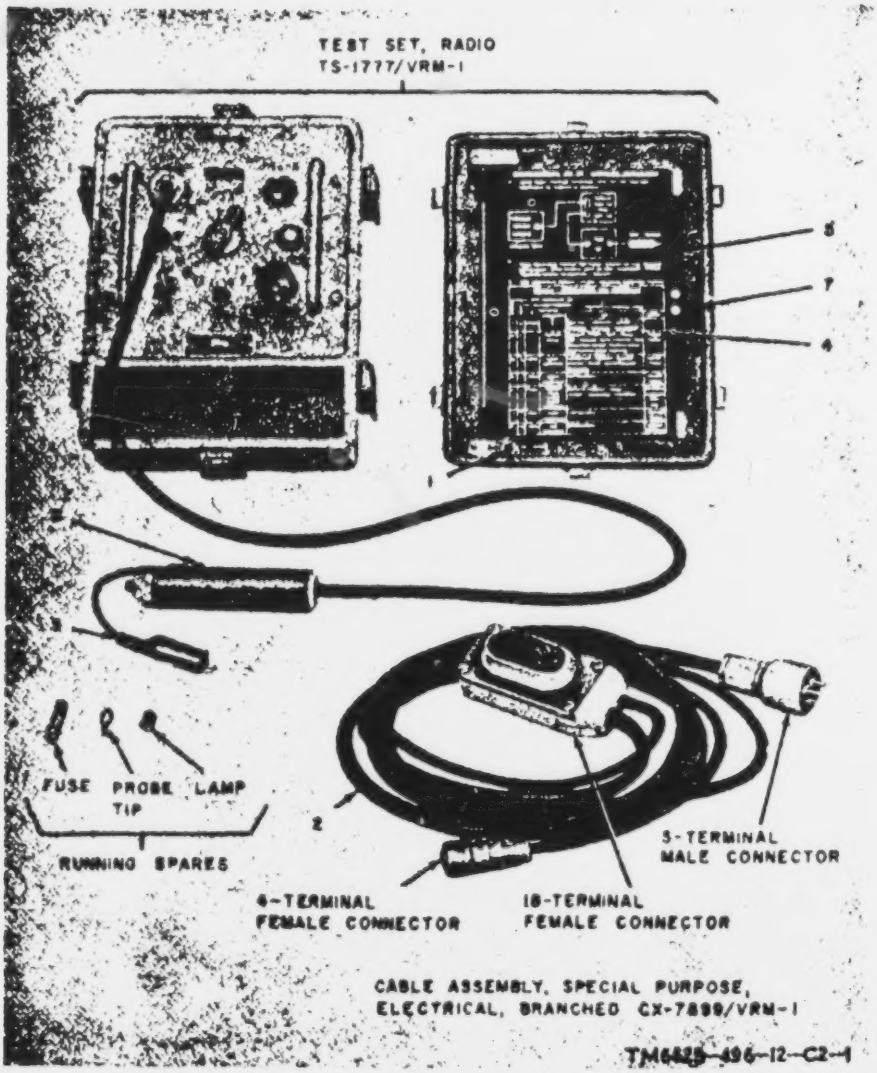


Figure 13(1). Organizational repair parts (part 1 of 2 parts).

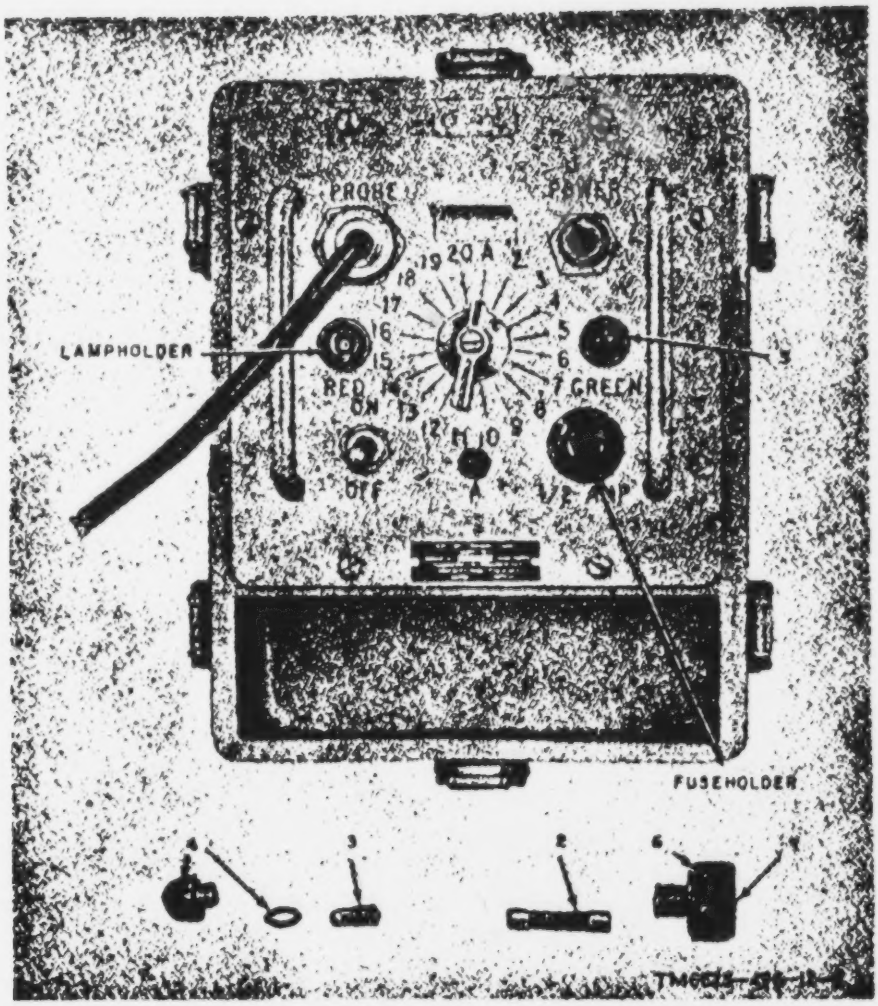


Figure 13(2). Organisational repair parts (part 2 of 2 parts).

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

USASA (2)
CNGB (1)
CC–E (7)
Dir of Trans (1)
CofEngrs (1)
TSG (1)
CofSptS (1)
USARADBD (5)
USAAESWBD (5)
USCONARC (5)
USAMC (5)
USAMICOM (4)
USASMC (2)
ARADCOM (5)
ARADCOM Rgn (2)
OS Maj Comd (4)
LOGCOMD (2)
MDW (1)
Armies (2) except
  EUSA (5)
Corps (2)
USAC (3)
11th Air Aslt Div (3)
Instl (2) except
  Ft Monmouth (70)
  Ft Hancock (4)
  Ft Gordon (10)
  Ft Huachuca (10)
  Ft Carson (25)
  Ft Lee (5)
  Ft Devens (5)
USACDCEA (1)
USACDCCBRA (1)
USACDCOA (1)
USACDCQMA (1)
USACDCTA (1)
USACDCADA (1)
USACDCARMA (1)
USACDCAVNA (1)
USACDCARTYA (1)
USACDCSWA (1)
USACDCCEA (1)
USACDCCEA (Ft Huachuca (1)
Svc Colleges (2)
Br Svc Sch (2) except
  USAAMS, USAIS (30)
  MFSS, USASCS (5)
  USAARMS (30),
    USAADS (5)
  USATSCH (5),
    USASESCS (40)
USAMERCC (5)
USASCC (4)
USATC AD (2)
USATC Armor (2)
USATC Engr (2)
USATC Inf (2)
USASTC (2)
WRAMC (1)
Army Pic Cen (2)
USAMEDTC (5)
BAMC (5)
USAINTC (5)
USAATC (5)
WSMR (5)
GENDEP (2)
Sig Sec, GEI DEP (5)
Sig Dep (12)
Army Dep (2) except
  SAAD (30), TOAD (14)
  FTWOAD (10),
    LEAD (7)
  SHAD (3), NAAD (5)
  SVAD (5), CHAD (3)
  ATAD (10), ERAD (5)
  Lexington-Blue Grass (14)
Army Tml (1) except
  OART (5)
Sig Fld Maint Shops (2)
AMS (1)
USAERDAA (2)
USAERDAW (13)
KMAG (5)
USA Rsch Spt Gp
  (Ft Belvoir) (5)
Units org under fol TOE:
    (2 copies each)
  1–7
  1–17
  1–55
  1–67
  1–75
  1–76
  1–77
  1–78
  1–307
  3–7
  5–5
  5–6
  5–7
  5–8
  5–15
  5–16
  5–17
  5–25
  5–26
  5–27
  5–35
  5–36
  5–37
  5–38
  5–52
  5–78
  5–115
  5–116
  5–145
  5–146
5–148
5–155
5–156
5–348
6–100
6–101
6–115
6–116
6–125
6–126
6–135
6–136
6–155
6–156
6–165
6–166
6–175
6–176
6–185
6–186
6–200
6–215
6–300
6–301
6–302
6–315
6–316
6–325
6–326
6–345
6–346
6–355
6–356
6–401
6–415
6–416
6–425
6–426
6–435
6–436
6–445
6–501
6–525
6–535
6–536
6–545
6–555
6–556
6–558
6–575
6–576
6–577
6–615
6–616
6–617
7
7–4
7–11
7–12

7-15
7-16
7-18
7-25
7-26
7-27
7-42
7-45
7-46
7-47
7-52
8-15
8-16
8-35
8-36
8-75
8-76
8-137
8-500 (AA-AH)
9-12
9-22
9-47
9-65
9-66
9-86
9-107
9-227
9-377
11-16
11-35
11-57
11-67
11-68
11-85
11-86
11-87
11-95
11-97
11-98
11-99
11-117
11-137
11-155
11-157
11-337
11-500 (AA-AE) (4)
11-587
11-592
11-597
17
17-2
17-4
17-17
17-22
17-25
17-26
17-27
17-32
17-35
17-36
17-37
17-42
17-45
17-46
17-51
17-52
17-55
17-56
17-57
17-62
17-65
17-66
17-75
17-85
17-86
17-105
17-106
17-107
17-108
19-29
10-35
19-37
19-55
19-57
19-217
19-500 (AA-AE)
20-45
20-46
29-1
29-11
29-15
29-16
29-17
29-21
29-25
29-27
29-35
29-36
29-37
29-56
29-407
30-25
31-105
32-67
32-500
33-106
33-500 (AA-AC)
37
37-4
37-42
39-51
44-235
44-236
44-237
44-435
44-436
44-437
55-16
55-27
55-28
55-46
55-47
55-56
55-57
55-58
55-75
55-76
55-138
55-139
55-140
55-500 (AA-AE)
57
57-100

NG: None.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

☆ U.S. GOVERNMENT PRINTING OFFICE : 1984 O - 421-647 (10150)

TM 11-6625-496-12
C 3

CHANGE
No. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *15 December 1970*

Operator's and Organizational Maintenance Manual Including Repair Parts and Special Tools Lists

TEST SETS, RADIO AN/VRM-1 AND AN/VRM-1A

TM 11-6625-496-12, 12 July 1962, is changed as follows:

Change the title of the manual as shown above.

NOTE

Parenthetical reference to a previous change (example: page 1 of C 2) indicates that pertinent material was published in that change.

Page 3. chapter 1. Add the following note after the heading for chapter 1.

NOTE

All references in this manual to AN/VRM-1 and TS-1777/VRM-1 apply to AN/VRM-1A and TS-1777A/VRM-1 (para 1*a*, *b*).

Paragraph 1. Add the following subparagraphs:

a. Test Set. Radio TS-1777A/VRM-1 (part of Test Set, Radio AN/VRM-1A) is identical with Test Set, Radio TS-1777/VRM-1 (part of Test Set, Radio AN/VRM-1) except for the case and cover. The front panel and attached chassis are mechanically and electrically identical with each other and may be mounted in the case of either the TS-1777/VRM-1 or TS-1777A/VRM-1. In the TS-1777/VRM-1, the case has six latches, the chassis panel is flush with the edge of the case, and the gasket in the cover sits flush on the case (fig. 3). In the TS-1777A/VRM-1, the case has four latches, the chassis panel is sunk below the edge of the case, and the gasket in the cover is recessed in the lip (fig. 3.1).

b. Refer to new figures 7 and 8 (this change) and check equipment on hand to see that latest plates for chart 1 and chart 4 are in the equipment. If not, the latest plates should be requisitioned (app. IV).

Paragraph 4, line 6. Delete "organizational".

Paragraph 5. Change the first item, "Input power requirements", to read: 23.4 to 28.6 volts de: 300 milliamperes at 26 volts de.

Page 5. Add figure 3.1 after figure 3.

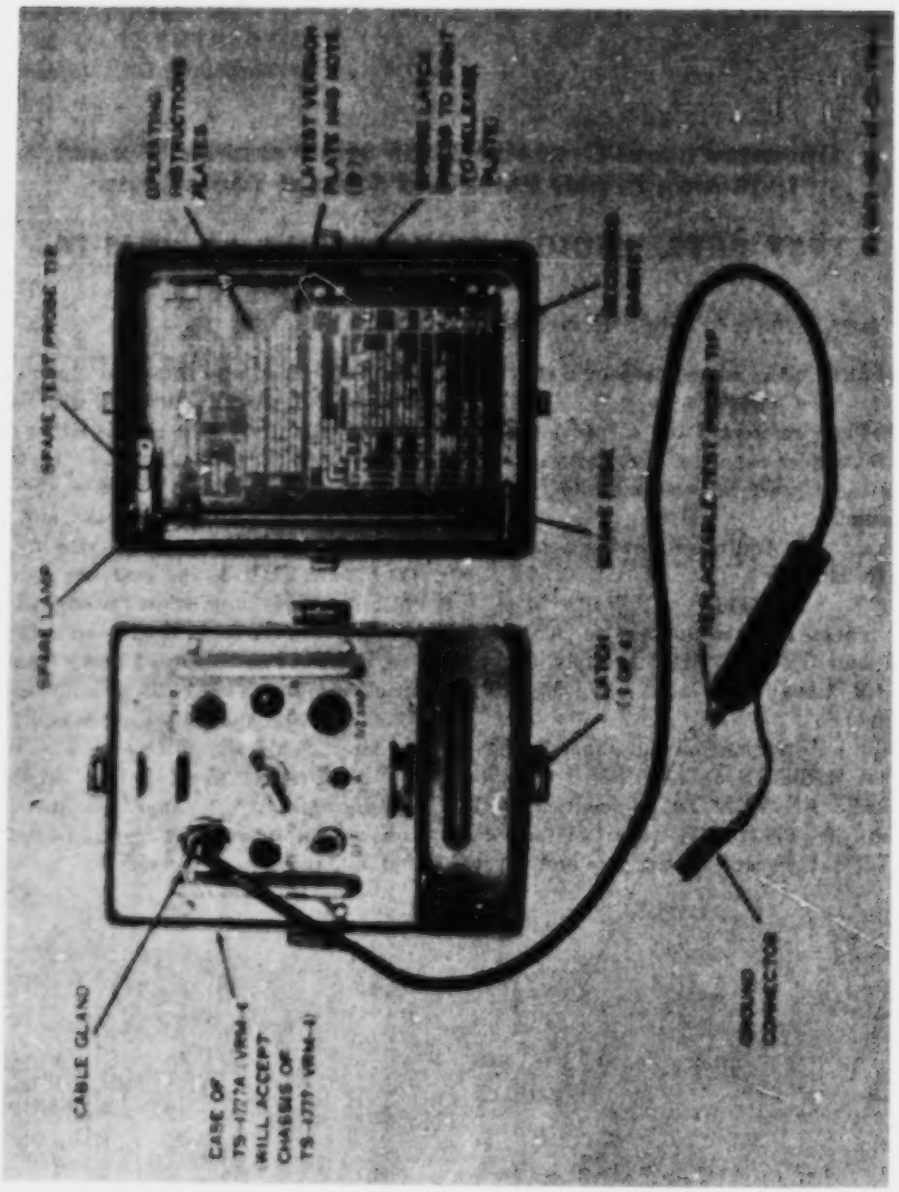

CABLE GLAND
CASE OF TS-1777A (VRM-1 WILL ACCEPT CHASSIS OF TS-1777 VRM-1)
SPARE LAMP
SPARE TEST PROBE TIP
OPERATING INSTRUCTIONS PLATES
LATEST VERSION PLATE AND NOTE
GROUND CONNECTOR

Figure 3.1.Test Set. Radio TS-1777A/VRM-1.

Page 12. Delete figure 7 and substitute new figure 7.

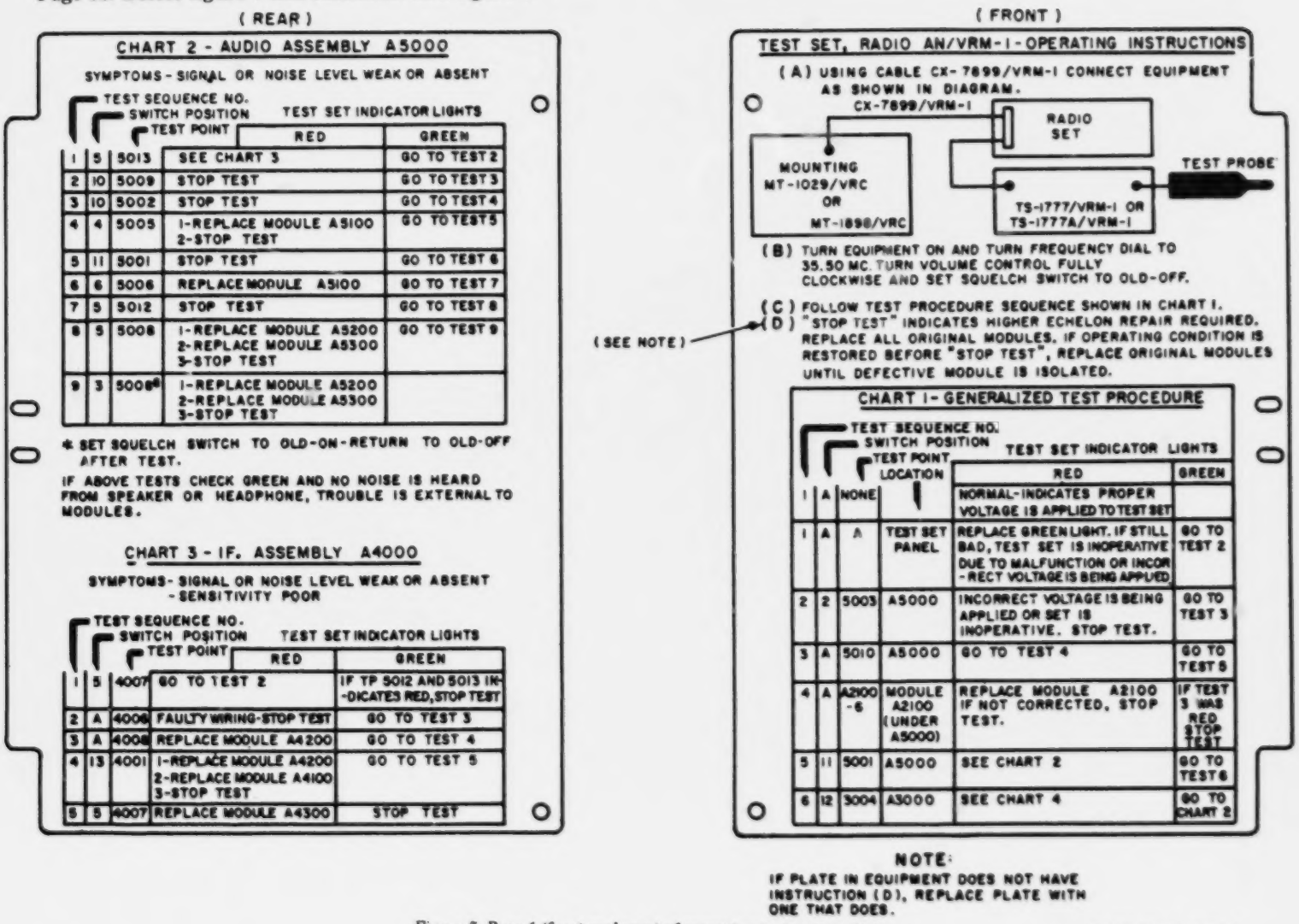

(REAR)
CHART 2 - AUDIO ASSEMBLY A5000
SYMPTOMS - SIGNAL OR NOISE LEVEL WEAK OR ABSENT
TEST SEQUENCE NO.
SWITCH POSITION
TEST POINT
TEST SET INDICATOR LIGHTS
RED
GREEN
1 5 5013 SEE CHART 3 GO TO TEST 2
2 10 5009 STOP TEST GO TO TEST 3
3 10 5002 STOP TEST GO TO TEST 4
4 4 5005 1-REPLACE MODULE A5100 2-STOP TEST GO TO TEST 5
5 11 5001 STOP TEST GO TO TEST 6
6 6 5006 REPLACE MODULE A5100 GO TO TEST 7
7 5 5012 STOP TEST GO TO TEST 8
8 5 5008 1-REPLACE MODULE A5200 2-REPLACE MODULE A5300 3-STOP TEST GO TO TEST 9
9 3 5008* 1-REPLACE MODULE A5200 2-REPLACE MODULE A5300 3-STOP TEST
* SET SQUELCH SWITCH TO OLD-ON-RETURN TO OLD-OFF AFTER TEST.
IF ABOVE TESTS CHECK GREEN AND NO NOISE IS HEARD FROM SPEAKER OR HEADPHONE, TROUBLE IS EXTERNAL TO MODULES.
CHART 3 - IF. ASSEMBLY A4000
SYMPTOMS - SIGNAL OR NOISE LEVEL WEAK OR ABSENT - SENSITIVITY POOR
TEST SEQUENCE NO.
SWITCH POSITION
TEST POINT
TEST SET INDICATOR LIGHTS
RED
GREEN
1 5 4007 GO TO TEST 2 IF TP 5012 AND 5013 INDICATES RED, STOP TEST
2 A 4006 FAULTY WIRING-STOP TEST GO TO TEST 3
3 A 4008 REPLACE MODULE A4200 GO TO TEST 4
4 13 4001 1-REPLACE MODULE A4200 2-REPLACE MODULE A4100 3-STOP TEST GO TO TEST 5
5 5 4007 REPLACE MODULE A4300 STOP TEST
(FRONT)
TEST SET, RADIO AN/VRM-1 - OPERATING INSTRUCTIONS
(A) USING CABLE CX-7899/VRM-1 CONNECT EQUIPMENT AS SHOWN IN DIAGRAM.
CX-7899/VRM-1
RADIO SET
MOUNTING MT-1029/VRC OR MT-1898/VRC
TEST PROBE
TS-1777/VRM-1 OR TS-1777A/VRM-1
(B) TURN EQUIPMENT ON AND TURN FREQUENCY DIAL TO 35.50 MC. TURN VOLUME CONTROL FULLY CLOCKWISE AND SET SQUELCH SWITCH TO OLD-OFF.
(C) FOLLOW TEST PROCEDURE SEQUENCE SHOWN IN CHART 1.
(SEE NOTE)
(D) "STOP TEST" INDICATES HIGHER ECHELON REPAIR REQUIRED. REPLACE ALL ORIGINAL MODULES. IF OPERATING CONDITION IS RESTORED BEFORE "STOP TEST", REPLACE ORIGINAL MODULES UNTIL DEFECTIVE MODULE IS ISOLATED.
CHART 1 - GENERALIZED TEST PROCEDURE
TEST SEQUENCE NO.
SWITCH POSITION
TEST POINT
LOCATION
TEST SET INDICATOR LIGHTS
RED
GREEN
1 A NONE NORMAL-INDICATES PROPER VOLTAGE IS APPLIED TO TEST SET
1 A A TEST SET PANEL REPLACE GREEN LIGHT. IF STILL BAD, TEST SET IS INOPERATIVE DUE TO MALFUNCTION OR INCORRECT VOLTAGE IS BEING APPLIED GO TO TEST 2
2 2 5003 A5000 INCORRECT VOLTAGE IS BEING APPLIED OR SET IS INOPERATIVE. STOP TEST. GO TO TEST 3
3 A 5010 A5000 GO TO TEST 4 GO TO TEST 5
4 A A2100-6 MODULE A2100 (UNDER A5000) REPLACE MODULE A2100 IF NOT CORRECTED, STOP TEST. IF TEST 3 WAS RED STOP TEST
5 11 5001 A5000 SEE CHART 2 GO TO TEST 6
6 12 5004 A5000 SEE CHART 4 GO TO CHART 2
NOTE:
IF PLATE IN EQUIPMENT DOES NOT HAVE INSTRUCTION (D), REPLACE PLATE WITH ONE THAT DOES.

Figure 7. Page 1 (front and rear) of operating instruction plate

EL6825-496-12-C3-TM-2

Page 13. Delete figure 8 and substitute new figure 8.

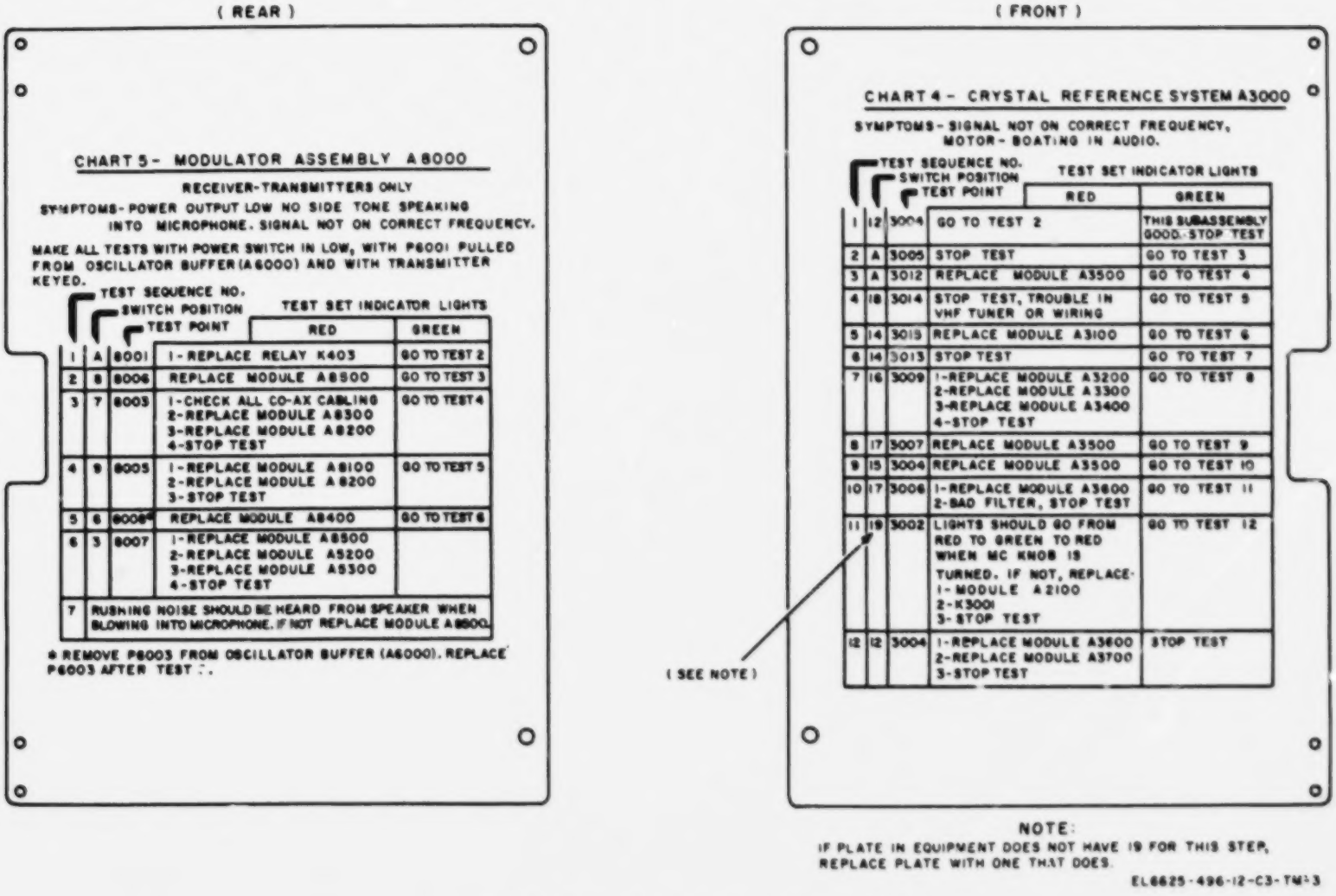

(REAR)
CHART 5 - MODULATOR ASSEMBLY A8000
RECEIVER-TRANSMITTERS ONLY
SYMPTOMS - POWER OUTPUT LOW NO SIDE TONE SPEAKING INTO MICROPHONE. SIGNAL NOT ON CORRECT FREQUENCY.
MAKE ALL TESTS WITH POWER SWITCH IN LOW, WITH P6001 PULLED FROM OSCILLATOR BUFFER (A6000) AND WITH TRANSMITTER KEYED.
TEST SEQUENCE NO.
SWITCH POSITION
TEST POINT
TEST SET INDICATOR LIGHTS
RED
GREEN
1 A 8001 1-REPLACE RELAY K403 GO TO TEST 2
2 8 8006 REPLACE MODULE A8500 GO TO TEST 3
3 7 8003 1-CHECK ALL CO-AX CABLING 2-REPLACE MODULE A8300 3-REPLACE MODULE A8200 4-STOP TEST GO TO TEST 4
4 9 8005 1-REPLACE MODULE A8100 2-REPLACE MODULE A 8200 3-STOP TEST GO TO TEST 5
5 6 8008* REPLACE MODULE A8400 GO TO TEST 6
6 3 8007 1-REPLACE MODULE A8500 2-REPLACE MODULE A5200 3-REPLACE MODULE A5300 4-STOP TEST
7 RUSHING NOISE SHOULD BE HEARD FROM SPEAKER WHEN BLOWING INTO MICROPHONE. IF NOT REPLACE MODULE A8500.
* REMOVE P6003 FROM OSCILLATOR BUFFER (A6000). REPLACE P6003 AFTER TEST.
(FRONT)
CHART 4 - CRYSTAL REFERENCE SYSTEM A3000
SYMPTOMS - SIGNAL NOT ON CORRECT FREQUENCY, MOTOR - BOATING IN AUDIO.
TEST SEQUENCE NO.
SWITCH POSITION
TEST POINT
TEST SET INDICATOR LIGHTS
RED
GREEN
1 12 3004 GO TO TEST 2 THIS SUBASSEMBLY GOOD - STOP TEST
2 A 3005 STOP TEST GO TO TEST 3
3 A 3012 REPLACE MODULE A3500 GO TO TEST 4
4 18 3014 STOP TEST, TROUBLE IN VHF TUNER OR WIRING GO TO TEST 5
5 14 3015 REPLACE MODULE A3100 GO TO TEST 6
6 14 3013 STOP TEST GO TO TEST 7
7 16 3009 1-REPLACE MODULE A3200 2-REPLACE MODULE A3300 3-REPLACE MODULE A3400 4-STOP TEST GO TO TEST 8
8 17 3007 REPLACE MODULE A3500 GO TO TEST 9
9 15 3004 REPLACE MODULE A3500 GO TO TEST 10
10 17 3006 1-REPLACE MODULE A3600 2-BAD FILTER, STOP TEST GO TO TEST 11
11 19 3002 LIGHTS SHOULD GO FROM RED TO GREEN TO RED WHEN MC KNOB IS TURNED. IF NOT, REPLACE- 1-MODULE A2100 2-K3001 3-STOP TEST GO TO TEST 12
12 12 3004 1-REPLACE MODULE A3600 2-REPLACE MODULE A3700 3-STOP TEST STOP TEST
(SEE NOTE)
NOTE:
IF PLATE IN EQUIPMENT DOES NOT HAVE 19 FOR THIS STEP, REPLACE PLATE WITH ONE THAT DOES.
EL6625-496-12-C3-TM-3

Figure 8. Part 2 (front and rear) of operating instruction plate.

Page 15. paragraph 14*b*, chart. In step 5, *Indicator lighted* column, add the following after "GREEN": (after delay of 1 to 10 seconds).

Page 16, paragraph 14c, chart. Make the following changes.

Add "(See note)" after *Indicator lighted* at top of fifth column.

In the "Procedure" column, step 8, change "Turn SQUELCH switch to OLD ON" to read: Turn SQUELCH switch to OLD ON for the next test.

At the bottom of the chart, add the following note:

NOTE

Wait between 1 and 10 seconds after the probe is put in the module test point for the GREEN lamp indication.

Page 18, paragraph 14*e*, chart. In "Selector switch position" column, step 11, change "A" to: 19

Page 20, paragraph 16. In *a*(5) and *b*(6), change "and close the six latches (fig. 3)" to read: and close the latches (fig. 3 and 3.1).

Page 21, paragraph 18.2*a* (page 2 of C 1). Delete the warning notice and substitute the following warning:

WARNING

The fumes of cleaning compound, trichloroethane (FSN 6810-292-9625; 1 qt) are toxic. Provide enough ventilation whenever used. Do not use near flame. Trichloroethane is not flammable, but exposure to the open flame converts the fumes to highly toxic and dangerous gases.

Page 25, paragraph 23*b*. Delete subparagraph *b* and substitute:

b. Cleaning compound, Trichloroethane (FSN 6810-292-9625; 1 qt). See warning notice in paragraph 18.2*a* concerning use of trichloroethane.

Page 29, paragraph 26*e*, chart. Make the following changes:

Add step 29.1 after step 29:

Step	*Unit*	*Action*	*Normal indication*	*Corrective measures*
29.1	TS-1777/VRM-1	Turn selector switch to 19 and insert test probe tip in test point TP3002. Rotate MC-TUNE control of radio to next detent position. During movement, indication should be RED to GREEN momentarily, then stay RED.	.....	Higher category maintenance repair required.

Add the following note at the end of the chart:

NOTE

The GREEN indication for audio test positions 3, 4, 5, 6, 10, and 11 (steps 12, 13, 14, 16, 21, and 22, respectively) should occur within a few seconds (no later than 10 seconds) after the probe is put in the module test period.

Page 34 (page 3 of C 2), appendix II. Section III is added after section II.

SECTION III MAINTENANCE AND OPERATING SUPPLIES

(1) COMPONENT APPLICATION	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION	(4) QTY REQUIRED FOR INITIAL OPERATION	(5) QTY REQUIRED FOR 8 HOURS OPERATION	(6) NOTES
					NOTE: PSN for packaged items (or lots) given in this list, are for packaged quantities more commonly used. A number of these items may come in larger or smaller quantities. These other quantities of the substance listed are authorized when appropriate to maintenance needs. Consult the pertinent supply manual for PSN.
VEHICLE/SCRIBBAR (1)	6810-292-9625	CLEANING COMPOUND	1 QT		

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:
KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:
To be distributed in accordance with DA Form 12-51, Organizational maintenance requirements for AN/VRC-12, AN/VRC-43, AN/VRC-44, AN/VRC-45, AN/VRC-46, AN/VRC-47, AN/VRC-48, AN/VRC-49, R-442/VRC, RT-246/VRC, and RT-524/VRC radio equipments.

CHANGE
No. 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *26 April 1973*

Operator's and Organizational Maintenance Manual
Including Repair Parts and Special Tools Lists
TEST SETS, RADIO AN/VRM-1 AND AN/VRM-1A

TM 11-6625-496-12, 12 July 1962, is changed as follows:

NOTE

Parenthetical reference to a previous change (example: page 1 of C 2) indicates that pertinent material was published in that change.

Page 3, paragraph 3c (page 1 of C 2), line 10. Change "ATTN: AMSEL-MR-(NMP)-MA" to: ATTN: AMSEL-MA-CR.

Page 4, paragraph 6. Delete paragraph 6 and substitute new paragraph 6.

6. Items Comprising Operable Equipment and Consumable Supplies and Materials

Refer to paragraph 10b for dimensions and weight of the equipment.

a. Items Comprising Operable Equipment (fig. 2, 3, and 3.1).

Federal stock No.	*Description*
6625-892-5542	Test Set, Radio AN/VRM-1 or AN/VRM-1A; comprised of one each of the following:
6625-892-5543	Test Set, Radio TS-1777/VRM-1 or TS-1777A/VRM-1
6625-439-8762	Cable Assembly, Special Purpose, Electrical, Branched CX-7899/VRM-1.

b. Expendable Consumable Supplies and Materials. One each of the following items (spares) is stored in the cover of the test set (fig. 3 and 3.1).

Federal stock No.	*Description*
5920-973-4653	Fuse, cartridge: ½ amp
6240-851-4352	Lamp, incandescent: type 330
6625-329-3312	Tip, test probe

Page 16, paragraph 14c. In "Procedure" column for step 8, change "Turn SQUELCH switch to OLD ON" to: Turn SQUELCH switch to OLD ON for next step and put the sentence after the next sentence ("Proceed to step 9.").

Page 18, paragraph 14e, chart, step 10. Make the following changes: In "Probable trouble" column for RED indicator, add the following: Defective A3700. In "Procedure" column for the defective A3700, add the following: Replace A3700 if RED and GREEN indicators flicker on and off (motorboating may be heard in handset). If flickering persists, stop test; higher echelon repair required.

Page 19, paragraph 15d, chart, step 3. In "Probable trouble" and "Procedure" columns, delete "W408" from the first sentence.

Page 34, appendix II (pages 2 and 3 of C 2). Delete appendix II.

Page 39, appendix IV (pages 8 through 12 of C 2). Delete appendix IV and substitute new appendix IV.

APPENDIX IV
ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

1. Scope

This appendix lists repair parts, required for the performance of organizational maintenance of the AN VRM-1 and AN/VRM-1A.

NOTE

No special tools, test, or support equipment is required.

2. General

This Repair Parts List is divided into the following sections:

a. Repair Parts—Section II. A list of repair parts authorized for the performance of maintenance at the organizational level.

b. Index—Federal Stock Number Cross-Reference to Figure and Item Number or Reference Designation—Section III. A list of Federal stock numbers in ascending numerical sequence, followed by a list of reference numbers in ascending alphanumeric sequence, cross-referenced to the illustration figure number and reference designation.

3. Explanation of Columns

The following provides an explanation of columns in the tabular lists:

a. Source, Maintenance, and Recovery Codes (SMR), Column 1:

(1) *Source code.* Indicates the selection status and source for the listed item. Source code is—

Code	*Explanation*
P	Repair parts which are stocked in or supplied from the GSA DSA, or Army supply system, and authorized for use at indicated maintenance categories.

(2) *Maintenance code.* Indicates the lowest category of maintenance authorized to install the listed item. The maintenance level code is—

Code	*Explanation*
O	Organizational maintenance

(3) *Recoverability code.* Not applicable.

b. Federal Stock Number, Column 2. This column indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. Description, Column 3. This column indicates the Federal item name and any additional description of the item required. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parentheses.

d. Unit of Measure (U M), Column 4. A two-character alphabetic abbreviation indicating the amount or quantity of the item upon which the allowances are based; e.g., ft, ea, pr, etc.

e. Quantity Incorporated in Unit, Column 5. This column indicates the quantity of the item used in the assembly group.

f. Allowances (15-Day Organizational Maintenance) Column 6. Items authorized for requisition as required are identified by an asterisk in the allowance column.

g. Illustrations, Column 7. This column is divided as follows:

(1) *Figure number, column 7a.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item number or reference designation, column 7b.* Indicates the reference designation used to identify the item in the illustration.

4. Special Information

Identification of the usable on codes included in column 3 of section II are—

Code	*Used on*
A	AN/VRM-1
B	AN VRM-1A

NOTE

Where no usable codes are indicated, item is applicable to all models.

5. Location of Repair Parts

a. This manual contains a cross-reference index (sec III) to be used to locate a repair part when either the Federal stock number, reference num-

ber (manufacturer's part number), or reference designation is known. The first column is prepared in numerical or alphanumeric sequence in ascending order. Where a Federal stock number is not listed, refer to the reference number (manufacturer's part number) immediately following the Federal stock number.

b. When the Federal stock number of reference number is known, refer to the index of Federal stock numbers (sec III) and locate the Federal stock number or reference number. The Federal stock number or reference number is cross-referenced to the applicable figure and reference designation.

c. When the reference designation is known, refer to section III (*b* above).

d. When neither the Federal stock number, reference number, nor reference designation is known, identify the part in the illustration and follow directions given in *c* above; or scrutinize column 3 of the repair parts list (sec II).

6. Federal Supply Code for Manufacturers

Codes	*Manufacturer*
13467	Electrospace Corporation
80063	Army Electronics Command Procurement and Production Directorate
81349	Military Specifications
96906	Military Standards

SECTION II REPAIR PARTS FOR ORGANIZATIONAL MAINTENANCE

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION Reference Number & Mfr Code	USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 15-DAY ORGANIZATIONAL MAINTENANCE ALW (a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100	(7) ILLUSTRATIONS (a) FIG NO.	(b) ITEM NO. OR REFERENCE DESIGNATION
		TEST SET, RADIO AN/VRM-1 (THIS ITEM IS NONEXPENDABLE)	A								
		TEST SET, RADIO AN/VRM-1A (THIS ITEM IS NONEXPENDABLE)	B								
P-O	5920-793-4653	FUSE, CARTRIDGE MS90078-7-1 (96906)		EA	8	•	•	•	•	4.5	F7000
P-O	6625-329-3312	TIP, TEST, PROBE SMA16106 (80063)		EA	4	•	•	•	•	4.5	E7922
P-O	6625-329-3312	TIP, TEST, PROBE SMA16106 (80063)		EA	REF	•	•	•	•	4.5	E7922A
P-O	6210-857-5322	LIGHT, INDICATOR, RED 17784-30XP10971 (72619)		EA	1	•	•	•	•	4.5	XDS7901
P-O	6210-857-5323	LIGHT, INDICATOR, RED 17784-30XP10972 (72619)		EA	1	•	•	•	•	4.5	XDS7902
P-O	6240-851-4352	LAMP, INCANDESCENT 330 (81349)		EA	3	•	•	•	•	4.5	DS7000
P-O				EA	1	•	•	•	•	4.5	
P-O	6625-857-5278	PLATE, INSTRUCTION SMC416142 (80063)		EA	1	•	•	•	•	4.5	A7202
P-O	6625-857-5277	PLATE, INSTRUCTION SMC416146 (80063)		EA	1	•	•	•	•	4.5	A7203
P-O				EA	1	•	•	•	•	4.5	
P-O	6625-345-8100	COVER GASKET SMC416125 (80063)	A	EA	1	•	•	•	•	4.5	MP7219
P-O		COVER GASKET C18038-118 (13467)	B	EA	1	•	•	•	•	4.5	MP7219
P-O	5920-793-4653	FUSE, CARTRIDGE MS90078-7-1 (96906)		EA	REF	•	•	•	•	4.5	F7901
P-O	5355-059-6285	KNOB SMA416222 (80063)		EA	1	•	•	•	•	4.5	MP7905
P-O	5305-059-6809	SCREW, MACHINE SMB416220-5 (80063)		EA	1	•	•	•	•	4.5	MP7907
P-O	6240-851-4352	LAMP, INCANDESCENT 330 (81349)		EA	2	•	•	•	•	4.5	DS7901
P-O	6240-851-4352	LAMP, INCANDESCENT 330 (81349)		EA	REF	•	•	•	•	4.5	DS7902

SECTION III INDEX-FEDERAL STOCK NUMBER AND REFERENCE NUMBER CROSS REFERENCE TO FIGURE AND ITEM NUMBER OR REFERENCE DESIGNATION

FEDERAL STOCK NUMBER	FIGURE NUMBER	ITEM NUMBER OR REF. DESIGNATION
5305-059-6809	13	H7907
5355-059-6285	13	MP7905
5920-793-4653	13	F7000 , F7901
6625-329-3312	13	F7922, F7922A
6210-857-5322	13	XDS7901
6210-857-5323	13	XDS7902
	13	
5920-793-4653	13	F7901
6240-851-4352	13	DS7000
6240-851-4352	13	DS7901
6240-851-4352	13	DS7902
6625-345-8100	13	MP7219

REFERENCE NO.	MFG. CODE	FIG. NO.	REFERENCE DESIGNATION
C3838-118	13467	13	MP7219
MS90087-7-1	96906	13	F7000, F7901
SMB416106	80063	13	E7922, E7922A
1778430XP10971	72619	13	XDS7901
1778430XP10972	72619	13	XDS7902
		13	
MS90078-7-1	96906	13	F7901
SMB416220-5	80063	13	H7907
SMC416125	80063	13	MP7219
SMC416142	80063	13	A7202
SMC416146	80063	13	A7203
SMD416222	80063	13	MP7905
330	81349	13	DS7000
330	81349	13	DS7901
330	81349	13	DS7902

FEDERAL STOCK NUMBER	FIGURE NUMBER	ITEM NUMBER OR REF. DESIGNATION

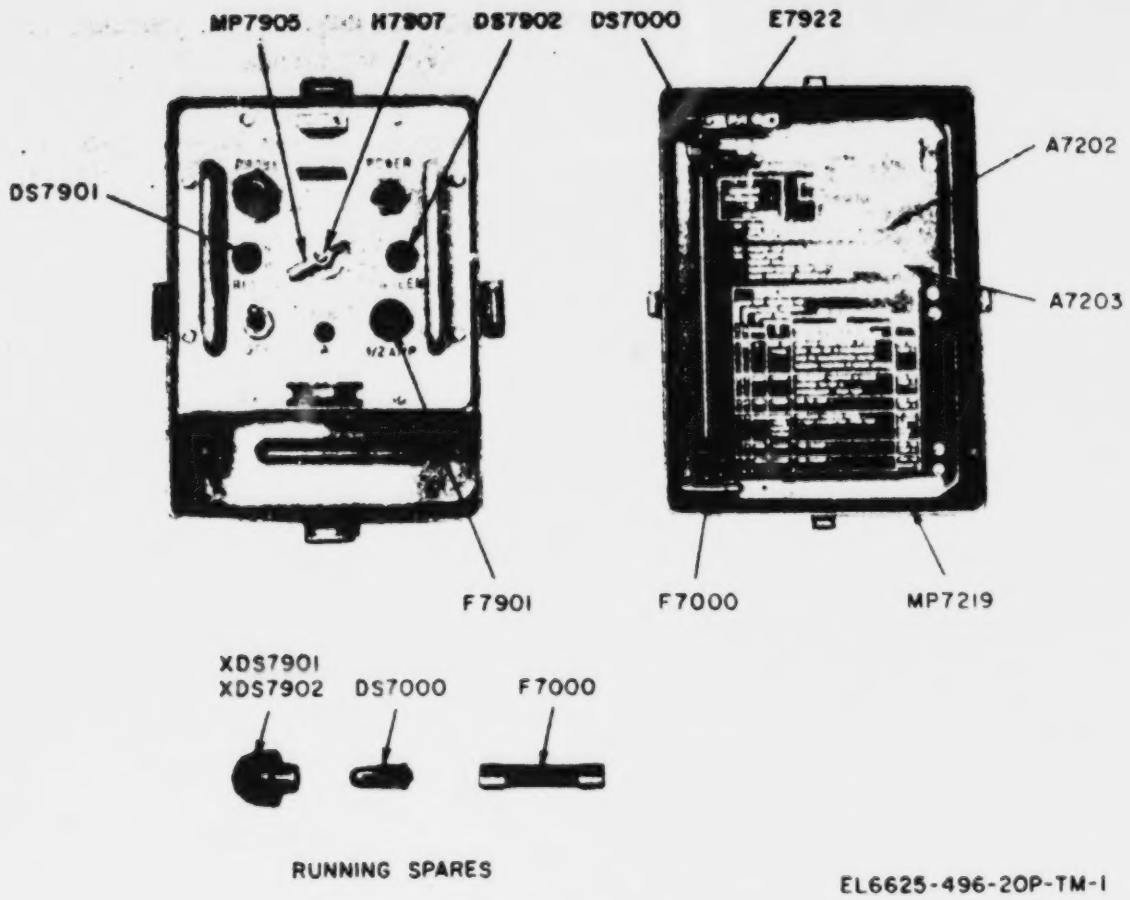


Figure 13. Test set, front view.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:

VERNE L. BOWERS
Major General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-51, organizational maintenance requirements for AN/VRC-12, AN/VRC-43, AN/VRC-44, AN/VRC-45, AN/VRC-46, AN/VRC-47, AN/VRC-48, AN/VRC-49, R-442/VRC, and RT-524/VRC Radio Equipment.

TM 11-6625-496-12
C 5

CHANGE
NO. 5

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *27 September 1978*

Operator's and Organizational Maintenance Manual Including Repair Parts and Special Tools Lists TEST SETS, RADIO AN/VRM-1 AND AN/VRM-1A (NSN 6625-00-892-5542)

TM 11-6625-496-12, 12 July 1962, is changed as follows:

The title of the manual is changed to read as indicated above.

Page 3. Make the following changes:

Paragraphs 2 and 3 are superseded as follows:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form (Packaging Improvement Report) as prescribed in AR 700-58/NAVSUPINST 4030.29/AFR 71-13/MCO P4030.29A, and DLAR 4145.8.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33A/AFR 75-18/MCO P4610.19B and DLAR 4500.15.

3. Reporting Errors

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Use DA Form 2028 (Recommended Changes to Publications and Blank Forms) and mail it direct to: Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703. A reply will be furnished to you.

Paragraphs 3.1 and 3.2 are added as follows:

3.1. Reporting Equipment Improvement Recommendations (EIR)

EIR's will be prepared using SF 368 (Quality Deficiency Report (Category II)). Instructions for preparing EIR's are provided in TM 38-750 (The Army Maintenance Management System). EIR's should be mailed direct to: Commander, US Army Communications and Electronics Materiel Readiness Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, NJ 07703. A reply will be furnished direct to you.

3.2. Indexes of Publications

a. Refer to DA Pam 310-4 to determine what changes to or revisions of this publication are current.

b. Refer to DA Pam 310-7 to determine what modification work orders (MWO's) covering this equipment are current.

Page 22, paragraph 20*c*, step 2, *Corrective measure* column. Delete "Replace lamp (para 21)" and substitute following: If GREEN indicator does not light, set selector switch to position 11. If GREEN indicator lights now, remove selector switch knob and set to position A. If GREEN indicator does not light now, replace the lamp (para 21).

Page 33. Appendix I is superseded as follows:

APPENDIX I
REFERENCES

DA Pam 310-4	Index of Technical Publications: Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.

DA Pam 310-7	US Army Equipment Index of Modification Work Orders.
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment.
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies and Equipment Used by Army.
TM 11-5820-401-12	Operator's and Organizational Maintenance Manual Including Repair Parts and Special Tools Lists: Radio Sets AN/VRC-12 (5820-00-223-7412), AN/BRC-43 (5820-00-223-7415), AN/VRC-44 (5820-00-223-7417), AN/VRC-45 (5820-00-223-7418), AN/VRC-46 (5820-00-223-7433), AN/VRC-47 (5820-00-223-7434), AN/VRC-48 (5820-00-223-7435), AN/VRC-49 (5820-00-223-7437), AN/VRC-54 (5820-00-223-7567), and AN/VRC-55 (5820-00-402-2265); Mounting MT-1029/VRC (5820-00-893-1323) and Mounting MT-1898/VRC (5820-00-893-1324); Antenna AT-912/VRC (5820-00-897-6357); Control, Frequency Selector C-2742/VRC (5820-00-892-3343), and Control, Radio Set C-2299/VRC (5820-00-892-3340).
TM 11-6625-203-12	Operator and Organizational Maintenance: Multimeter AN/URM-105, and AN/URM-105C, Including Multimeter ME-77/U and ME-77C/U.
TM 38-750	The Army Maintenance Management System (TAMMS).

By Order of the Secretary of the Army:

BERNARD W. ROGERS
General, United States Army
Chief of Staff

Official:

J. C. PENNINGTON
Brigadier General, United States Army
The Adjutant General

Distribution:
To be distributed in accordance with DA Form 12-51 operator TM literature requirements for AN/VRM-1.

* United States Government Printing Office:1981--341-662/9448

Technical Manual
No. 11-6625-496-12

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., *12 July 1962*

TEST SET, RADIO AN/VRM-1

			Paragraph	Page
CHAPTER	1.	INTRODUCTION		
Section	I.	General		
		Scope	1	3
		Forms and records	2	3
		Index of equipment publications	3	3
	II.	Description and data		
		Purpose and use	4	3
		Technical characteristics	5	3
		Table of components	6	4
		Description of Test Set, Radio TS-1777/VRM-1	7	4
		Description of Cable Assembly, Special Purpose, Electrical, Branched CX-7899/VRM-1	8	5
		Additional equipment required	9	6
CHAPTER	2.	INSTALLATION		
		Unpacking	10	7
		Checking unpacked equipment	11	7
		Connections	12	7
CHAPTER	3.	OPERATING INSTRUCTIONS		
		Test Set, Radio TS-1777/VRM-1 operating controls, indicators, and connectors	13	11
		Testing modules in Receiver, Radio R-442/VRC	14	11
		Testing modules in Receiver-Transmitter, Radio RT-246/VRC or RT-524/VRC	15	18
		Stopping procedure	16	20
CHAPTER	4.	OPERATOR'S MAINTENANCE INSTRUCTIONS		
		Scope of operator's maintenance	17	21
		Preventive maintenance	18	21
		Visual inspection	19	21
		Operational checklist	20	21
		Replacement of lamps and fuses	21	22
CHAPTER	5.	ORGANIZATIONAL MAINTENANCE INSTRUCTIONS		
		Organizational maintenance duties	22	25
		Tools, materials, and test equipment required	23	25
		Preventive maintenance	24	25
		Visual inspection	25	25
		Equipment performance checklist	26	25
		Removal and replacement of test probe tip	27	29
		Removal and replacement of operating instructions plates	28	30
CHAPTER	6.	SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE		
Section	I.	Shipment and limited storage		
		Disassembling and securing Test Set, Radio AN/VRM-1	29	31
		Repackaging for shipment or limited storage	30	31
	II.	Demolition to prevent enemy use		
		Authority for demolition	31	31
		Methods for destruction	32	32
APPENDIX	I.	REFERENCES		33
	II.	BASIC ISSUE ITEMS LIST		34
	III.	MAINTENANCE ALLOCATION		36

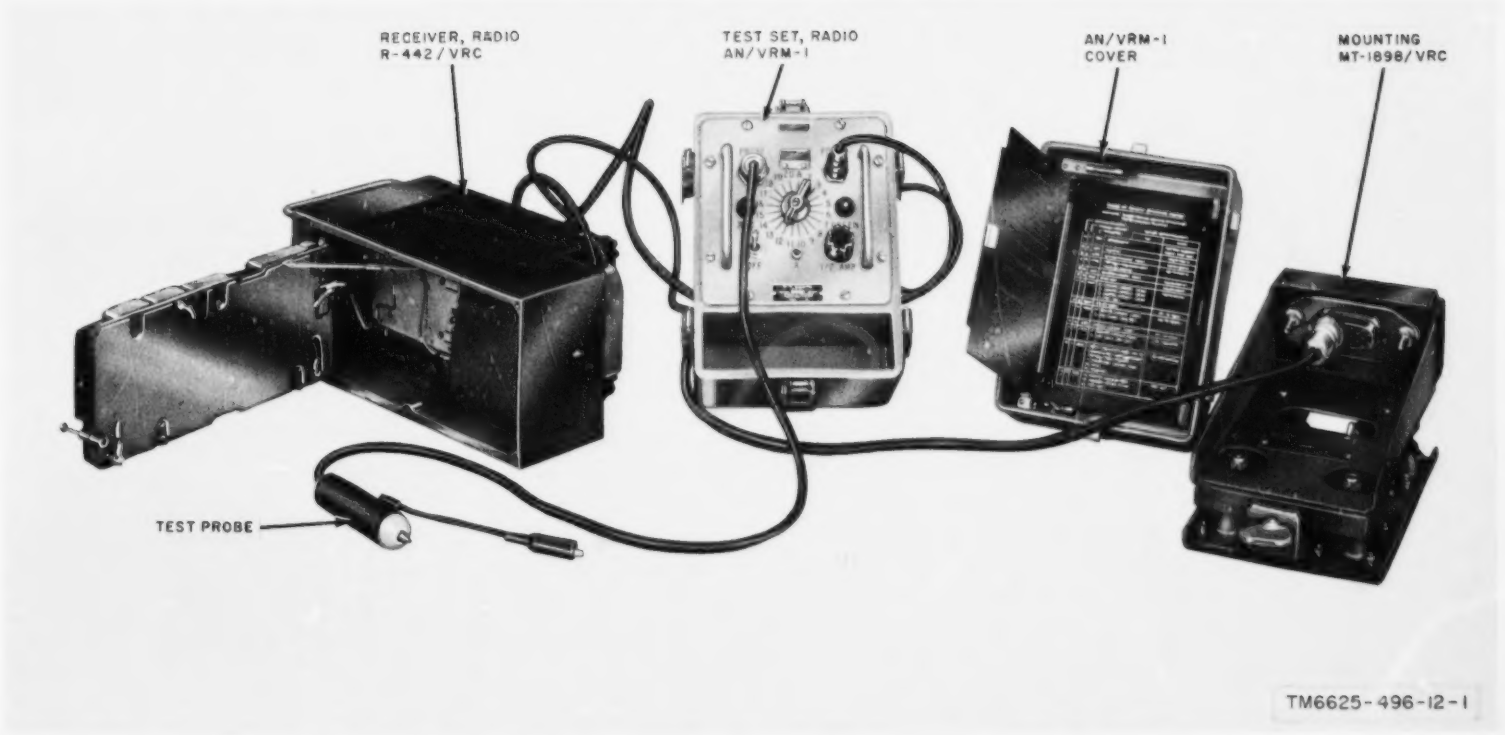


Figure 1. Test Set, Radio AN/VRM-1, test-bench application.

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

This manual describes Test Set, Radio AN/VRM-1 and covers its installation, operation, operator's maintenance, organizational maintenance, and repackaging instructions for shipment or limited storage. It includes cleaning and inspection of the equipment, and replacement of parts available to operator and organizational maintenance personnel.

2. Forms and Records

a. Unsatisfactory Equipment Report. Fill out and forward DA Form 468 (Unsatisfactory Equipment Report) as specifield in AR 700-38.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58.

c. Preventive Maintenance Forms. Prepare DA Form 11-266 (fig. 11, 13, and 14) (Maintenance Check List for Signal Equipment (Test Equipment)), in accordance with instructions on the form.

d. Parts List Form. Forward DA Form 2028 (Recommended Changes to DA Technical Manuals Parts Lists or Supply Manual 7, 8, or 9) direct to the Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS-MLM Fort Monmouth, N.J., to recommend changes in, or to comment on, Basic Issue Items Lists or Repair Parts and Special Tools Lists.

e. Comments on Manual. Forward all other comments on this publication direct to the Commanding Officer, U.S. Army Signal Materiel Support Agency, ATTN: SIGMS-MPP-4, Fort Monmouth, N.J.

3. Index of Equipment Publications

Refer to DA Pam 310-4 to determine what Changes to or revisions of this publication are current.

Section II. DESCRIPTION AND DATA

4. Purpose and Use

Test Set, Radio AN/VRM-1 is a portable equipment for testing the plug-in modules of Receiver, Radio R-442/VRC and Receiver-Transmitters, Radio RT-246/VRC and RT-524/VRC. The AN/VRM-1 is used by organizational maintenance personnel responsible for maintaining the components of Radio Set AN/VRC-12 and Radio Sets AN/VRC-43 through -49.

5. Technical Characteristics

Input power requirements	300 milliamperes at 26 volts direct current.
Modules tested:	
Direct (individual module isolated)	A2100, A3100, A3500, A4100, A4200, A4300, A5100, A8400.
Indirect (one of several related modules isolated)	A3200, A3300, A3400, A3600, A3700, A5200, A5300, A8100, A8200, A8300, A8500.
Test indication	Indicator lamps.

6. Table of Components

The components of the AN/VRM-1 are listed in the Basic Issue Items List (appx II). The components are illustrated in figure 2.

7. Description of Test Set, Radio TS-1777/VRM-1 (fig. 3)

a. Test Set, Radio TS-1777/VRM-1 is a compact, lightweight test set housed in a

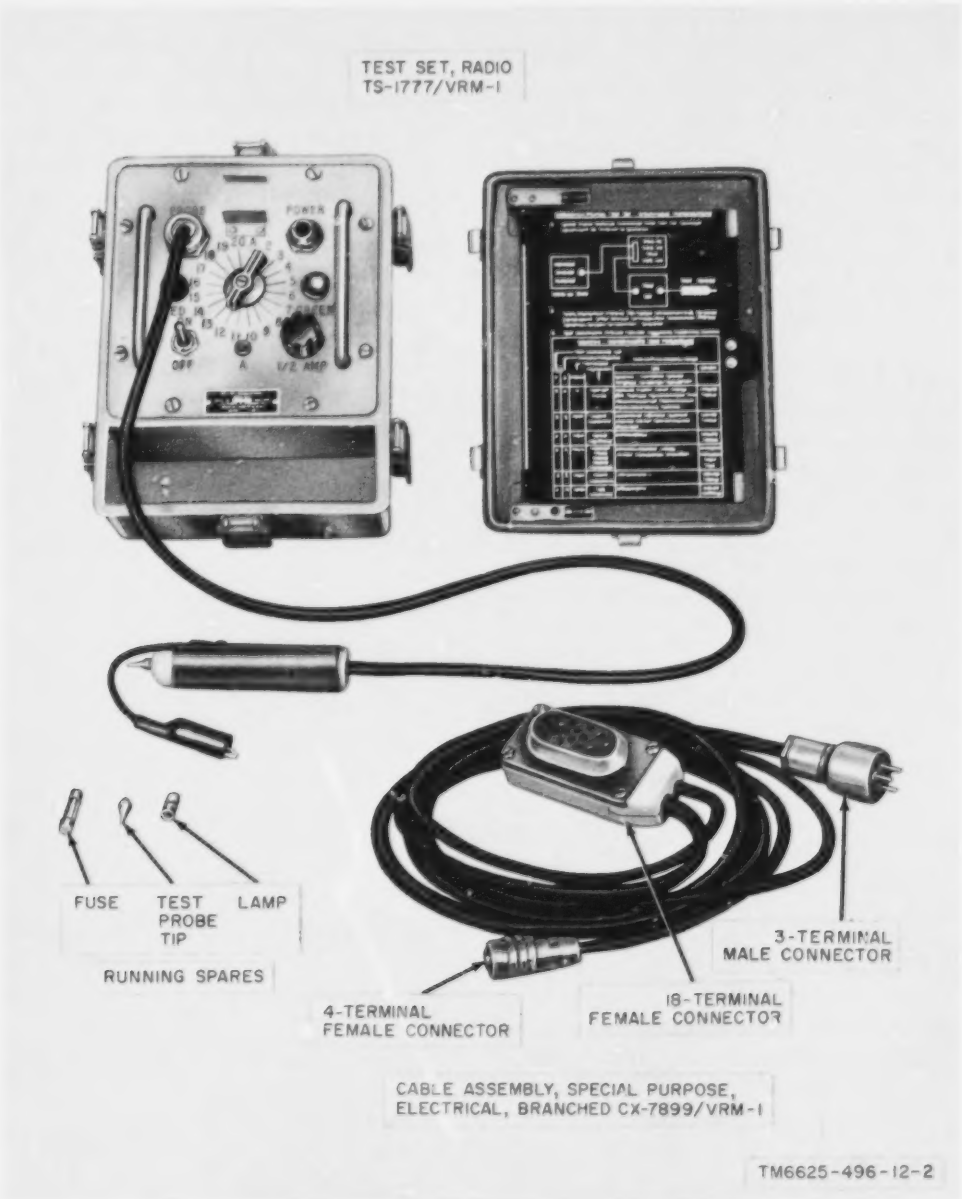


Figure 2. Test Set, Radio AN/VRM-1, components and running spares.

watertight case. All operating controls, indicators, and connectors are located on the front panel. A test probe cable assembly is permanently attached to the front panel of the TS-1777/VRM-1. A test probe holder holds the test probe when not in use. The TS-1777/VRM-1 is watertight with its cover secured.

b. A cable storage area in the case is used for storing the CX-7879/VRM-1 when it is not being used. Operating instructions plates are mounted on hinges in the cover. The running spares are stored in retainers in the cover.

8. Description of Cable Assembly, Special Purpose, Electrical, Branched CX-7899/VRM-1 (fig. 2)

The CX-7899/VRM-1 is a two-branched cable assembly which provides power from Mounting MT-1898/VRC or MT-1029/VRC to the R-442/VRC, RT-246/VRC, or RT-524/VRC and to the TS-1777/VRM-1. The 18-terminal female connector mates with the 18-terminal male connector at the rear of the R-442/VRC, RT-246/VRC, or RT-524/VRC. The three-terminal male connector mates with the three (large-size)

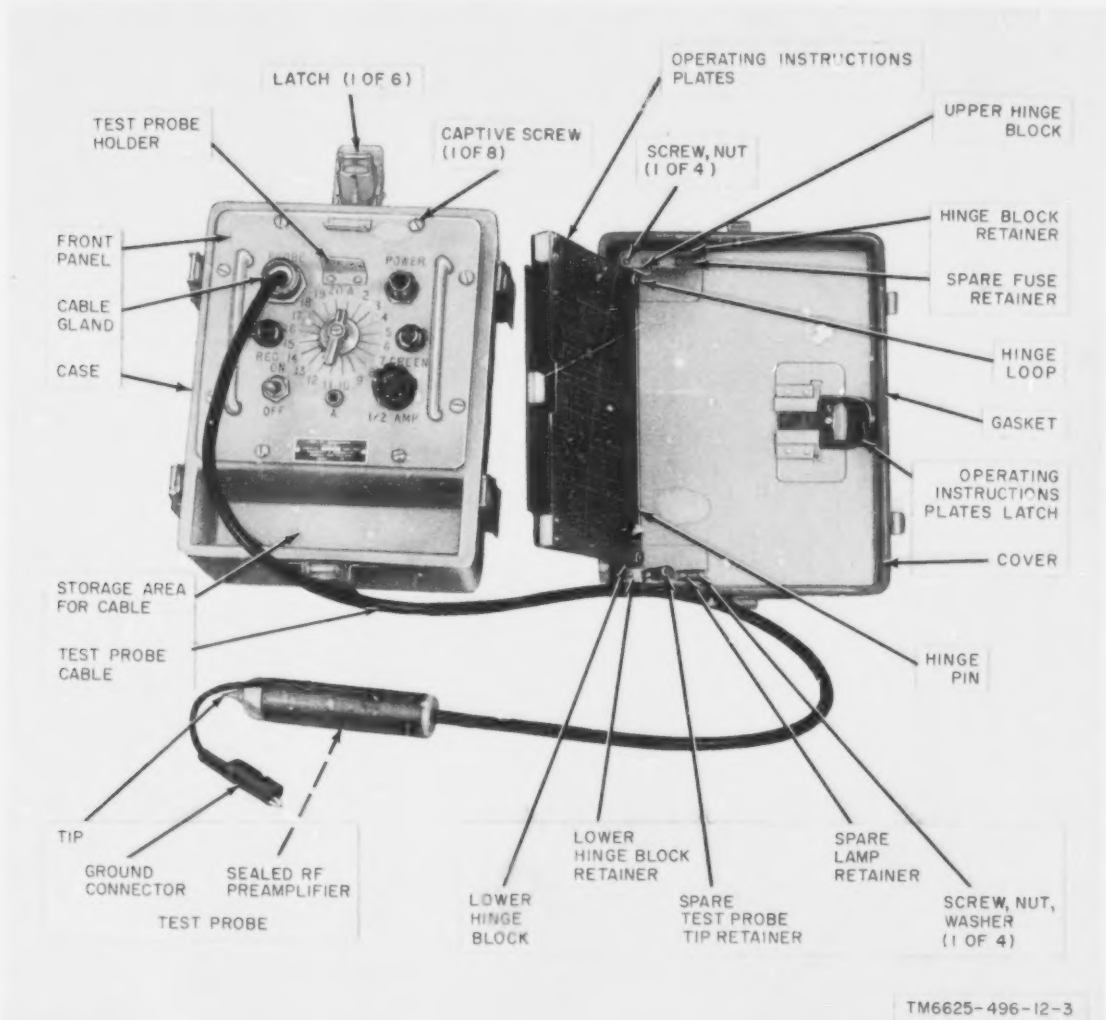


Figure 3. Test Set, Radio TS-1777/VRM-1.

female contacts of the connector on the front of the junction box of the MT-1029/VRC or MT-1898/VRC. A four-terminal female connector mates with the four-terminal POWER connector on the front of the TS-1777/VRM-1.

9. Additional Equipment Required

The following equipment is not supplied as a part of Test Set, Radio AN/VRM-1 but is required for its use:

a. Power Source. A 24-volt direct-current (dc) power source, such as a vehicular electrical system, is required to supply input power to the TS-1777/VRM-1 and to the R-442/VRC, RT-246/VRC, or RT-524/VRC under test.

b. Mounting MT-1029/VRC or MT-1898/VRC. The MT-1029/VRC is the mounting for an RT-246/VRC or RT-524/VRC (para 19, TM 11-5820-401-10). The MT-1898/VRC is the mounting for an R-442/VRC (para 16, TM 11-5820-401-10).

c. Cable Assembly, Power, Electrical CX-4720/VRC. The CX-4720/VRC connects an MT-1029/VRC or MT-1898/VRC to the power source (para 23, TM 11-5820-401-10).

d. Microphone, Dynamic M-80/GR or equal. The M-80/GR is used to key and modulate the RT-246/VRC or RT-524/VRC during tests of the transmitter circuits.

e. Headset, Electrical H-140/GR or Equal. The H-140/GR is used to listen to the receiver output during audio tests.

CHAPTER 2

INSTALLATION

10. Unpacking

a. Packaging Data. When packed for shipment, the AN/VRM-1 is placed in a carton and packed in a wooden case. A typical shipping case with its contents is shown in figure 4.

b. Component Dimensions.

Component	Overall dimensions (in.)			Volume (cu ft)	Weight (lb)
	Height	Width	Depth		
Test Set, Radio TS-1777/VRM-1 ----------	5.87	7.44	9.44	0.25	6.5
Cable Assembly, Special Purpose, Electrical, Branched CX-7899/VRM-1 (length 64 in.).	----	----	----	(stored inside TS-1777/VRM-1 case).	1.5

c. Removing Contents. Perform all steps outlined below when unpacking equipment that is packed in a wooden packing case (fig. 4). When unpacking equipment that is packed in cartons, omit the procedures given in (1), (2), and (3) below.

(1) Cut and fold back the metal straps.

(2) Remove the nails from the wooden cover with a nailpuller. Do not attempt to pry it off; the equipment may become damaged.

(3) Open the moisture-vaporproof barrier that covers the outer corrugated carton inside the wooden packing case. Remove the inner corrugated carton.

(4) Open the inner corrugated carton and remove the contents.

(5) Remove and open the envelope containing the technical manuals.

11. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, refer to paragraph 2 for applicable forms and records.

b. Check the equipment against the packing list. If a packing list is not available, use the Basic Issue Items List (appx II).

12. Connections (fig. 5)

a. Vehicular Installed R-442/VRC.

(1) Remove the R-442/VRC from its MT-1898/VRC.

(2) Remove the top and bottom covers from the R-552/VRC.

(3) Release the six latches (fig. 3) which secure the TS-1777/VRM-1 cover to its case, and remove the cover.

(4) Remove the CX-7899/VRM-1 from its stored position.

(5) Connect the three-terminal connector of CX-7899/VRM-1 (fig. 2) to terminals A, B, and C of connector J14 on the front of the junction box on the MT-1898/VRC.

(6) Connect the 18-terminal connector of the CX-7899/VRM-1 to connector P201 at the rear of the R-422/VRC.

(7) Connect the four-terminal connector of the CX-7899/VRM-1 to the POWER connector on the TS-1777/VRM-1.

(8) Check to be sure that no connection is made at either ANT connector.

b. Vehicular Installed RT-246/VRC or RT-524/VRC.

(1) Remove the RT-246/VRC or

RT-524/VRC from its MT-1029/VRC.

(2) Remove the top and bottom covers from the RT-246/VRC or RT-524/VRC.

(3) Release the six latches (fig. 3) which secure the TS-1777/VRM-1 cover to the case and remove the cover.

(4) Remove the CX-7899/VRM-1 from its stored position.

(5) Connect the three-terminal connector of the CX-7899/VRM-1 (fig. 2) to terminals A, B, and C of connector J24 on the front of the junction box on the MT-1029/VRC.

(6) Connect the 18-terminal connector of the CX-7899/VRM-1 to connector P401 at the rear of the RT-246/VRC or RT-524/VRC.

(7) Connect the four-terminal connector of the CX-7899/VRM-1 to the POWER connector on the TS-1777/VRM-1.

(8) Connect the M-80/GR to the MIKE connector on the RT-246/VRC or RT-524/VRC.

(9) Check to be sure that no connection is made to the ANT connector.

c. Bench Tests for R-442/VRC.

(1) Connect a CX-4720/VRC from a 26-volt dc power source to connector J11 on the bottom of an MT-1898/VRC.

(2) Remove the top and bottom covers of the R-422/VRC and make the connections listed in *a* above.

d. Bench Tests for RT-246/VRC or RT-524/VRC.

(1) Connect a CX-4720/VRC from a 26-volt dc power source to connector J21 on the bottom of an MT-1029/VRC.

(2) Remove the top and bottom covers from the RT-246/VRC or RT-524/VRC.

(3) Make the connections listed in *b* above.

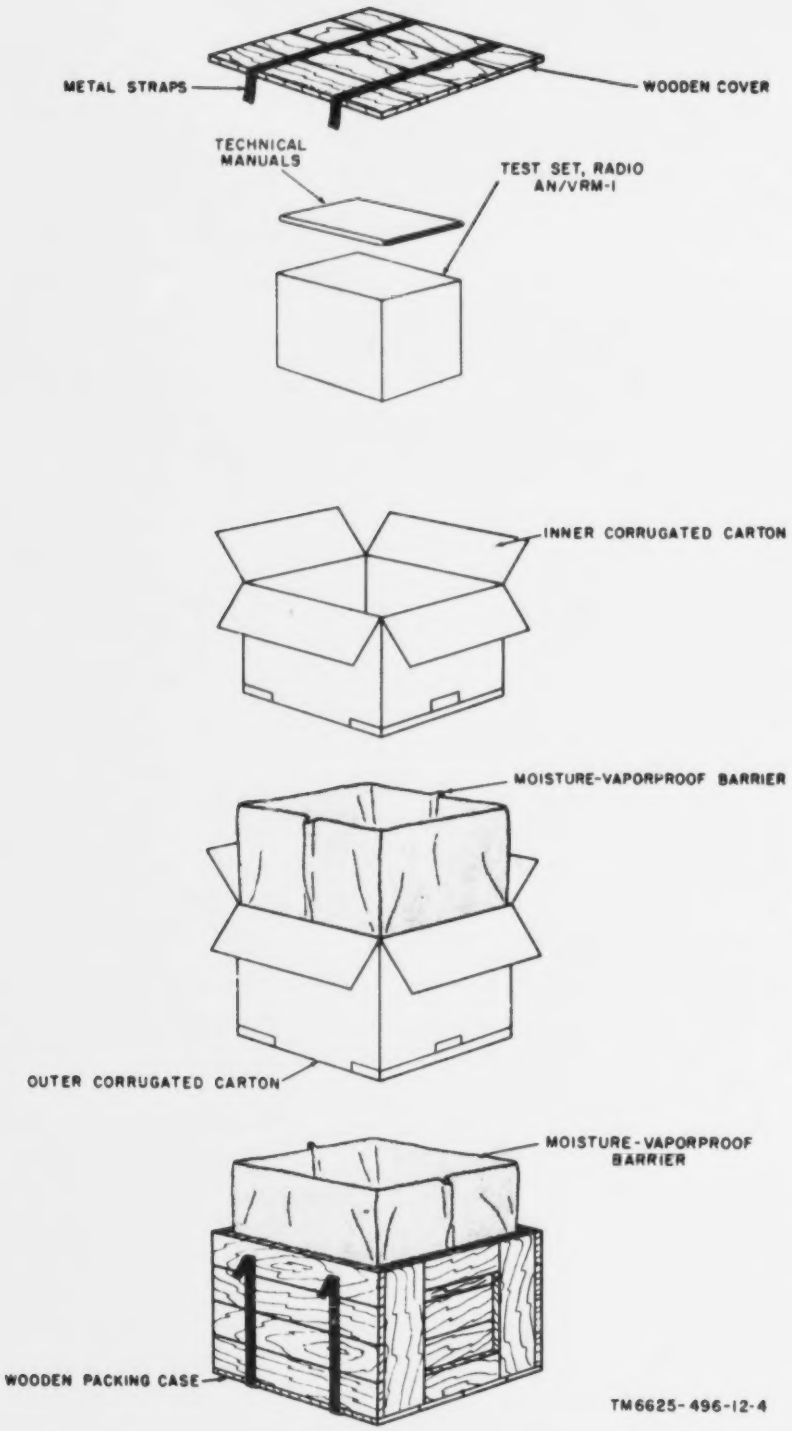
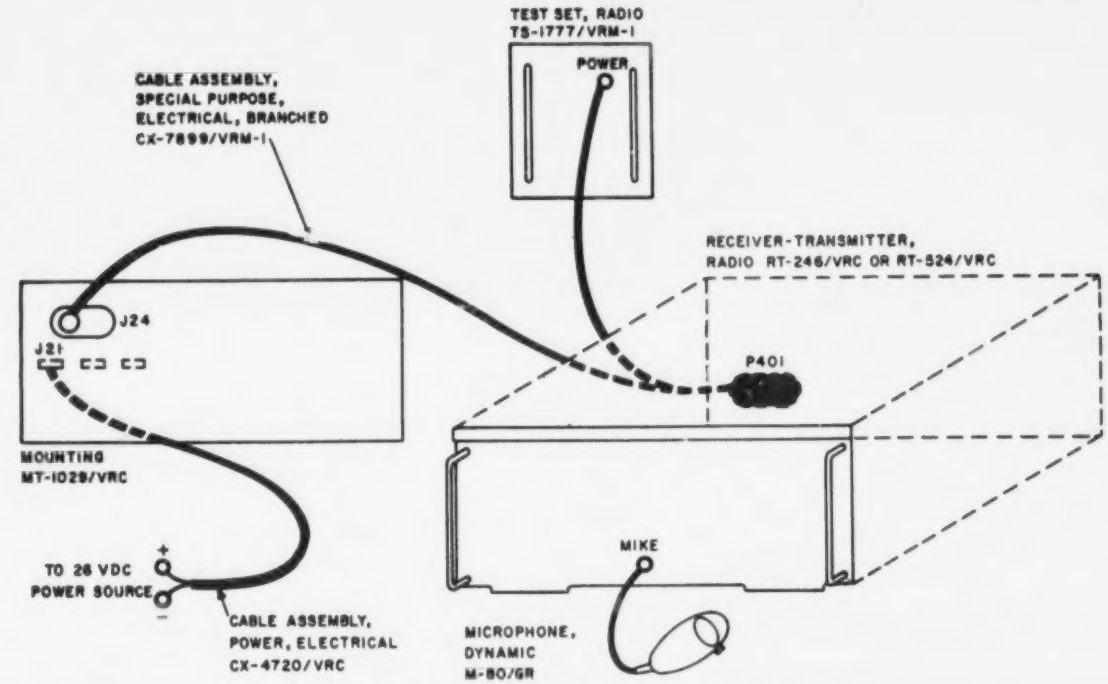
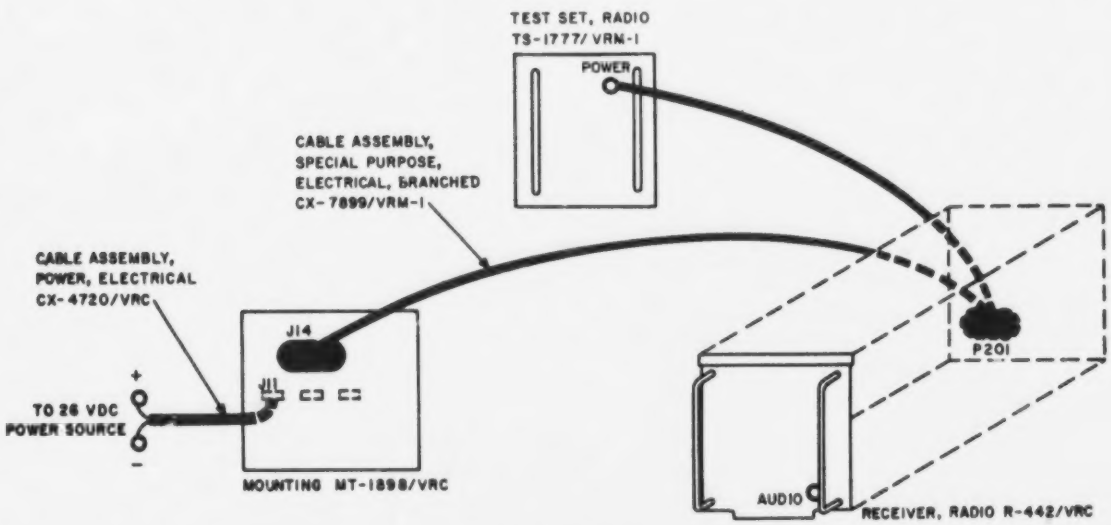


Figure 4. Typical packaging diagram.



RT-246/VRC OR RT-524/VRC TESTS



R-442/VRC TESTS

TM6823-496-12-5

Figure 5. Test connection diagrams.

CHAPTER 3

OPERATING INSTRUCTIONS

13. Test Set, Radio TS-1777/VRM-1 Operating Controls, Indicators, and Connectors (fig. 6)

Control, indicator, or connector	Function
POWER connector	Connection for CX-7899/VRM-1.
RED indicator ---	Indicates when power is applied to TS-1777/VRM-1 or when module or circuit being tested is bad during test.
GREEN indicator	Indicates module or circuit being tested is good.
ON-OFF switch --	Turns AN/VRM-1 on and off.
Selector switch ---	Selects modules or circuits to be tested.
Test jack A ------	Test point for measuring regulated voltage in TS-1777/VRM-1.

14. Testing Modules in Receiver, Radio R-442/VRC (fig. 6)

This procedure gives detailed instructions for testing modules in an R-422/VRC using Test Set, Radio AN/VRM-1. Perform the tests in the order given. When instructions direct the replacement of a module to correct a trouble, repeat the test after replacement of the module to be sure that this action corrects the trouble. If the instructions direct the substitution of a new module and this does not correct the trouble, replace the new module with the one originally installed. Be sure to connect the ground connector on the test probe (fig. 3) to chassis ground before attempting a

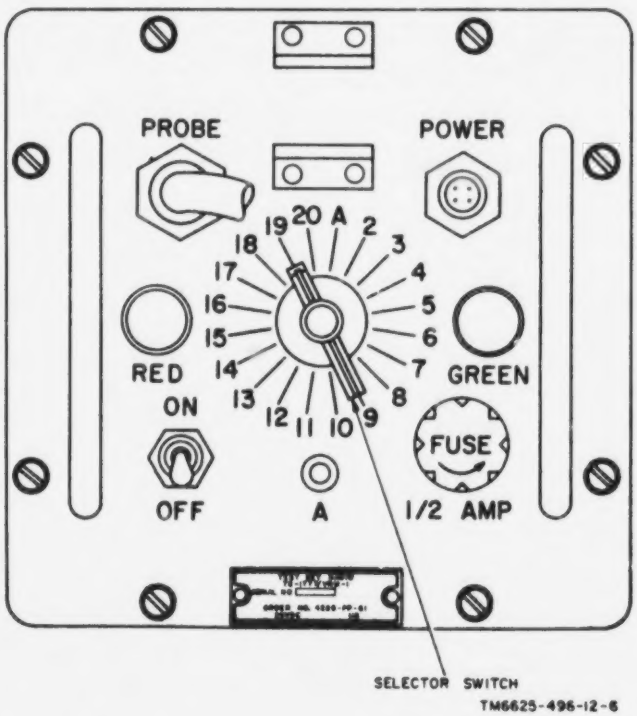


Figure 6. Test Set, Radio TS-1777/VRM-1, controls, indicators, and connectors.

(REAR)

CHART 2 - AUDIO ASSEMBLY A5000

SYMPTOMS - SIGNAL OR NOISE LEVEL WEAK OR ABSENT

TEST SEQUENCE NO.	SWITCH POSITION	TEST POINT	TEST SET INDICATOR LIGHTS RED	GREEN
1	5	5013	SEE CHART 3	GO TO TEST 2
2	10	5009	STOP TEST	GO TO TEST 3
3	10	5002	STOP TEST	GO TO TEST 4
4	4	5005	1-REPLACE MODULE A5100 2-STOP TEST	GO TO TEST 5
5	11	5001	STOP TEST	GO TO TEST 6
6	6	5006	REPLACE MODULE A5100	GO TO TEST 7
7	5	5012	STOP TEST	GO TO TEST 8
8	5	5008	1-REPLACE MODULE A5200 2-REPLACE MODULE A5300 3-STOP TEST	GO TO TEST 9
9	3	5008*	1-REPLACE MODULE A5200 2-REPLACE MODULE A5300 3-STOP TEST	

* SET SQUELCH SWITCH TO OLD-ON-RETURN TO OLD-OFF AFTER TEST.

IF ABOVE TESTS CHECK GREEN AND NO NOISE IS HEARD FROM SPEAKER OR HEADPHONE, TROUBLE IS EXTERNAL TO MODULES.

CHART 3 - IF. ASSEMBLY A4000

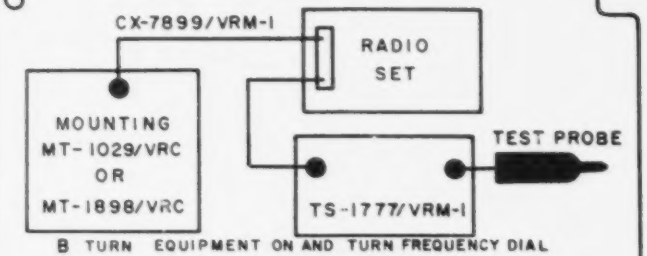
SYMPTOMS - SIGNAL OR NOISE LEVEL WEAK OR ABSENT - SENSITIVITY POOR

TEST SEQUENCE NO.	SWITCH POSITION	TEST POINT	TEST SET INDICATOR LIGHTS RED	GREEN
1	5	4007	GO TO TEST 2	IF TP 5012 AND 5013 INDICATES RED, STOP TEST
2	A	4006	FAULTY WIRING-STOP TEST	GO TO TEST 3
3	A	4008	REPLACE MODULE A4200	GO TO TEST 4
4	13	4001	1-REPLACE MODULE A4200 2-REPLACE MODULE A4100 3-STOP TEST	GO TO TEST 5
5	5	4007	REPLACE MODULE A4300	STOP TEST

(FRONT)

TEST SET, RADIO AN/VRM-1 - OPERATING INSTRUCTIONS

A USING CABLE CX-7899/VRM-1 CONNECT EQUIPMENT AS SHOWN IN DIAGRAM.



B TURN EQUIPMENT ON AND TURN FREQUENCY DIAL TO 35.50 MC. TURN VOLUME CONTROL FULLY CLOCKWISE AND SET SQUELCH SWITCH TO OLD OFF.

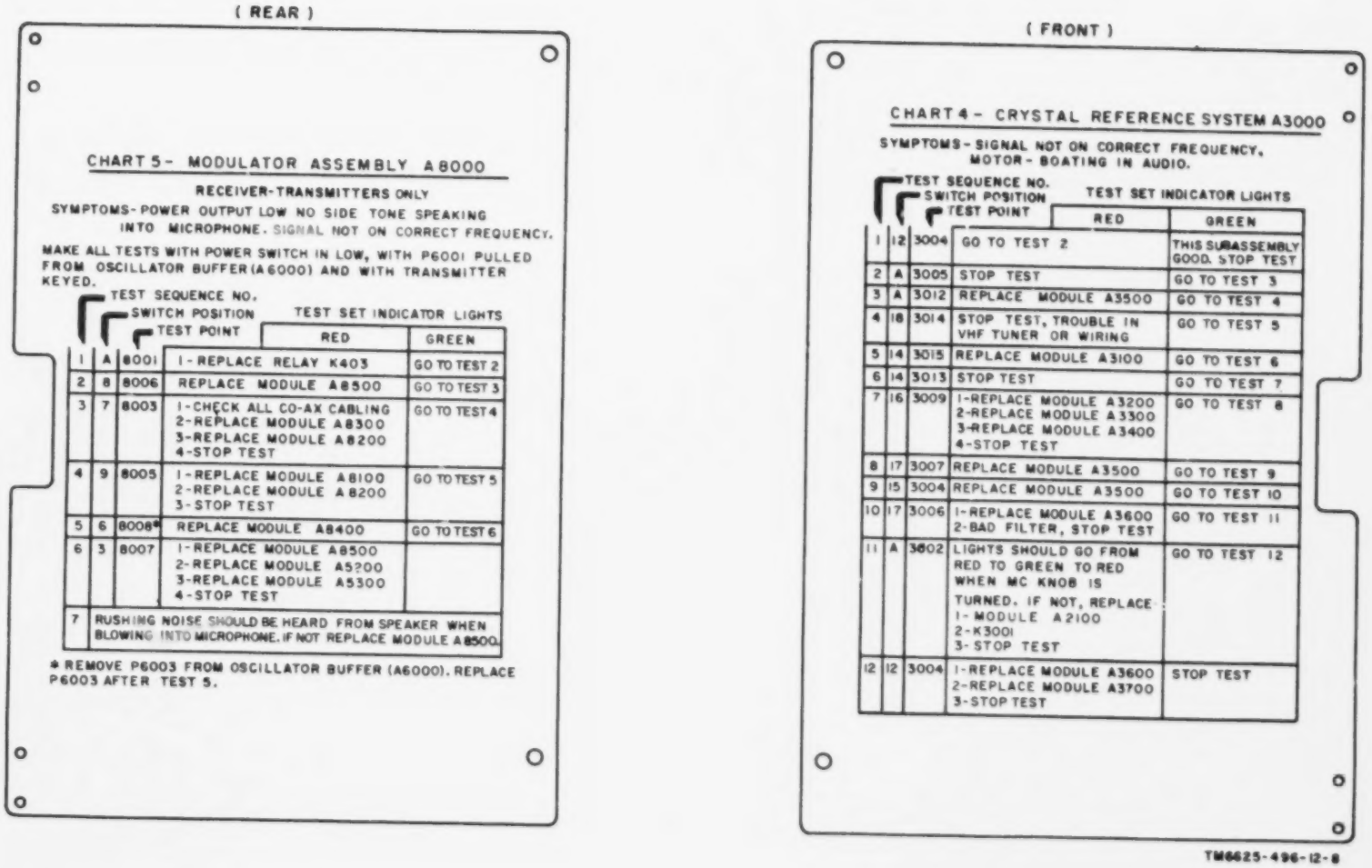
C FOLLOW TEST PROCEDURE SEQUENCE SHOWN IN CHART 1.

CHART 1 - GENERALIZED TEST PROCEDURE

TEST SEQUENCE NO.	SWITCH POSITION	TEST POINT	LOCATION	TEST SET INDICATOR LIGHTS RED	GREEN
1	A	NONE		NORMAL - INDICATES PROPER VOLTAGE IS APPLIED TO TEST SET	
1	A	A	TEST SET PANEL	REPLACE GREEN LIGHT. IF STILL BAD, TEST SET IS INOPERATIVE DUE TO MALFUNCTION OR INCORRECT VOLTAGE IS BEING APPLIED	GO TO TEST 2
2	2	5003	A5000	INCORRECT VOLTAGE IS BEING APPLIED OR SET IS INOPERATIVE. STOP TEST.	GO TO TEST 3
3	A	5010	A5000	GO TO TEST 4	GO TO TEST 5
4	A	A2100-6	MODULE A2100 (UNDER A5000)	REPLACE MODULE A2100 IF NOT CORRECTED, STOP TEST.	IF TEST 3 WAS RED STOP TEST
5	11	5001	A5000	SEE CHART 2	GO TO TEST 6
6	12	3004	A3000	SEE CHART 4	GO TO CHART 2

TM6625-496-12-7

Figure 7. Page 1 (front and rear) of operating instructions plate.



(REAR)

CHART 5 - MODULATOR ASSEMBLY A8000

RECEIVER-TRANSMITTERS ONLY

SYMPTOMS - POWER OUTPUT LOW NO SIDE TONE SPEAKING INTO MICROPHONE. SIGNAL NOT ON CORRECT FREQUENCY.

MAKE ALL TESTS WITH POWER SWITCH IN LOW, WITH P6001 PULLED FROM OSCILLATOR BUFFER (A6000) AND WITH TRANSMITTER KEYED.

TEST SEQUENCE NO.	SWITCH POSITION	TEST POINT	TEST SET INDICATOR LIGHTS RED	GREEN
1	A	8001	1-REPLACE RELAY K403	GO TO TEST 2
2	8	8006	REPLACE MODULE A8500	GO TO TEST 3
3	7	8003	1-CHECK ALL CO-AX CABLING 2-REPLACE MODULE A8300 3-REPLACE MODULE A8200 4-STOP TEST	GO TO TEST 4
4	9	8005	1-REPLACE MODULE A8100 2-REPLACE MODULE A8200 3-STOP TEST	GO TO TEST 5
5	6	8008*	REPLACE MODULE A8400	GO TO TEST 6
6	3	8007	1-REPLACE MODULE A8500 2-REPLACE MODULE A5200 3-REPLACE MODULE A5300 4-STOP TEST	
7	RUSHING NOISE SHOULD BE HEARD FROM SPEAKER WHEN BLOWING INTO MICROPHONE. IF NOT REPLACE MODULE A8500.			

* REMOVE P6003 FROM OSCILLATOR BUFFER (A6000). REPLACE P6003 AFTER TEST 5.

(FRONT)

CHART 4 - CRYSTAL REFERENCE SYSTEM A3000

SYMPTOMS - SIGNAL NOT ON CORRECT FREQUENCY, MOTOR-BOATING IN AUDIO.

TEST SEQUENCE NO.	SWITCH POSITION	TEST POINT	TEST SET INDICATOR LIGHTS RED	GREEN
1	12	3004	GO TO TEST 2	THIS SUBASSEMBLY GOOD. STOP TEST
2	A	3005	STOP TEST	GO TO TEST 3
3	A	3012	REPLACE MODULE A3500	GO TO TEST 4
4	18	3014	STOP TEST, TROUBLE IN VHF TUNER OR WIRING	GO TO TEST 5
5	14	3015	REPLACE MODULE A3100	GO TO TEST 6
6	14	3013	STOP TEST	GO TO TEST 7
7	16	3009	1-REPLACE MODULE A3200 2-REPLACE MODULE A3300 3-REPLACE MODULE A3400 4-STOP TEST	GO TO TEST 8
8	17	3007	REPLACE MODULE A3500	GO TO TEST 9
9	15	3004	REPLACE MODULE A3500	GO TO TEST 10
10	17	3006	1-REPLACE MODULE A3600 2-BAD FILTER, STOP TEST	GO TO TEST 11
11	A	3002	LIGHTS SHOULD GO FROM RED TO GREEN TO RED WHEN MC KNOB IS TURNED. IF NOT, REPLACE: 1-MODULE A2100 2-K3001 3-STOP TEST	GO TO TEST 12
12	12	3004	1-REPLACE MODULE A3600 2-REPLACE MODULE A3700 3-STOP TEST	STOP TEST

TM6625-496-12-8

Figure 8. Page 2 (front and rear) of operating instructions plate.

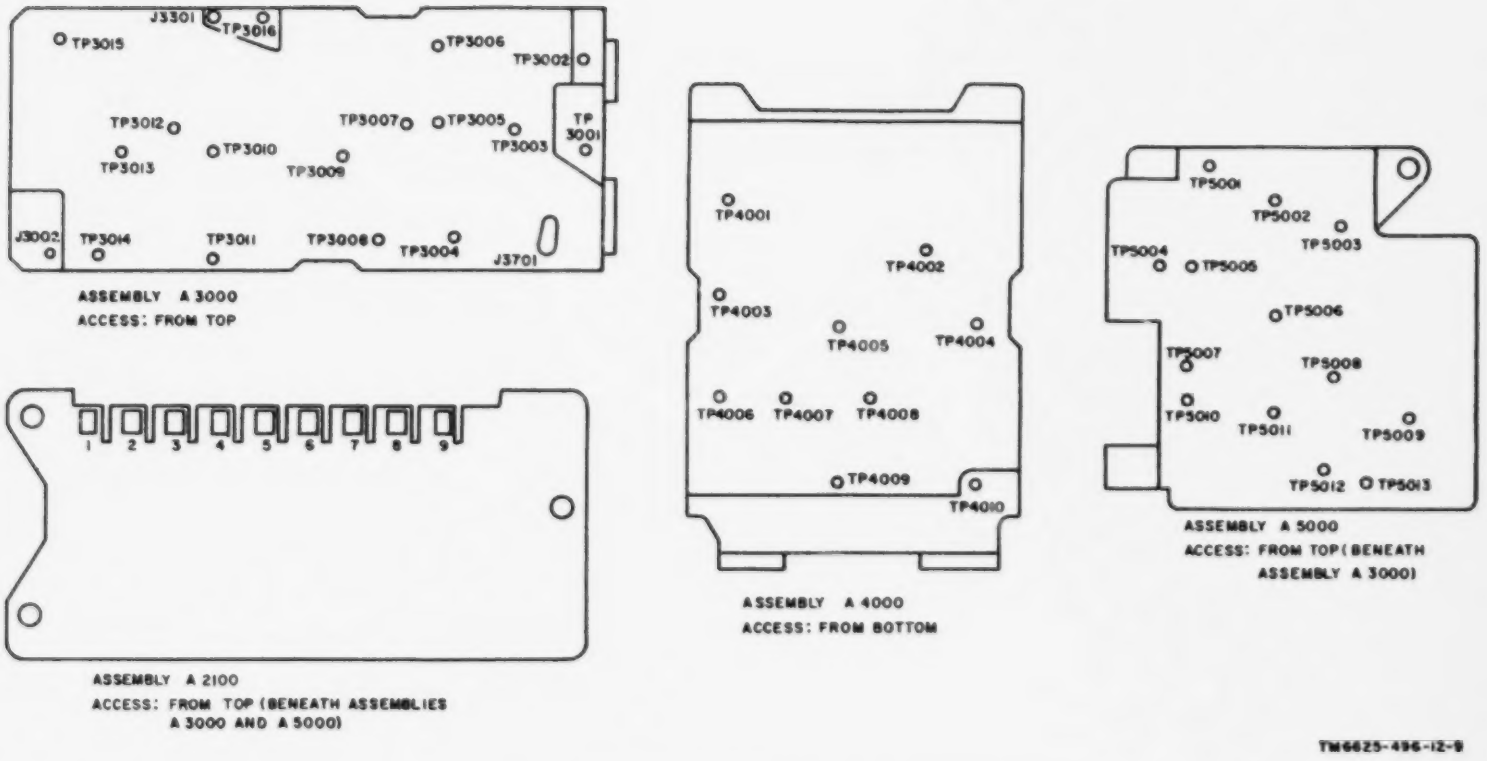


Figure 9. Test point location in Receiver, Radio R-442/VRC and receiver section of Receiver-Transmitters, Radio RT-246/VRC and RT-524/VRC.

test. Condensed operating instructions are provided on the operating instructions plates mounted in the cover of the TS-1777/VRM-1 and are shown in figures 7 and 8. Figure 9 shows the location of test points in the R-442/VRC.

a. Preliminary Procedure.

(1) Make the connections for testing modules in an R-442/VRC as instructed in paragraph 12.

(2) Adjust the R-442/VRC controls as listed in the following chart.

Control	Position or indication
SQUELCH	OLD OFF
POWER	ON-RESET
BAND	A
MC-TUNE-KC	35.50 mc
VOLUME	Fully clockwise

(3) Place the R-442/VRC on its side, loosen the captive screw which holds assembly A3000 in place, and swing the assembly out until the brace locks.

(4) Turn the TS-1777/VRM-1 ON-OFF switch ON and note that the RED indicator lights.

b. Sectionalizing Troubles. The sectionalizing procedure given below will indicate which major assembly is defective. It will also indicate trouble in assembly A2100. Perform the procedures given in the chart. Follow the steps in the order given.

Step	Selector switch position	Point measured		Indicator lighted	Probable trouble	Procedure
		Module	Test point			
1	A		A on front panel of TS-1777/VRM-1.	RED GREEN	Defective green indicator lamp in TS-1777/VRM-1. ---	Replace green indicator lamp in TS-1777/VRM-1 (para 21). Proceed to step 2.
2	2	A5000	TP5003	RED GREEN	Incorrect voltage applied to A5000. ---	Stop test; higher echelon repair required. Proceed to step 3.
3	A	A5000	TP5010	RED GREEN	--- ---	Loosen the captive screws, remove assembly A5000, and then proceed to step 4. Proceed to step 5.
4	A	A2100	Terminal 6	RED GREEN	Defective A2100 Defective cabling between A2100 and A5000.	Replace A2100 and repeat step 3. If trouble is not corrected, stop test; higher echelon repair required. Stop test; higher echelon repair required.
5	11	A5000	TP5001	RED GREEN	Low or no output from A5000. ---	Check A5000; use procedure given in below. Proceed to step 6.
6	12	A3000	TP3004	RED GREEN	Improper output from A3500. Defective audio or if. stages.	Check A3000; use procedure given in below. Check A5000; use procedure given in below.

c. Localizing Troubles in Audio Assembly A5000. The localizing procedure given below will locate the defective module in assembly A5000. Perform the procedures given in the chart below. Follow the steps in the order given.

Step	Selector switch position	Point measured		Indicator lighted	Trouble	Procedure
		Module	Test point			
1	5	A5000	TP5013	RED GREEN	Insufficient output from A4000.	Check A4000; use procedure in *d* below. Proceed to step 2.
2	10	A5000	TP5009	RED GREEN	Defective FL5001	Stop test; higher echelon repair required. Proceed to step 3.
3	10	A5000	TP5002	RED GREEN	Defective connections to VOLUME control.	Stop test; higher echelon repair required. Proceed to step 4.
4	4	A5000	TP5005	RED GREEN	Defective A5100, T5001, or connections to T5001.	Replace A5100. If RED indicator still lights, stop test, higher echelon repair required. Proceed to step 5.
5	11	A5000	TP5001	RED GREEN	Defective T5001	Stop test; higher echelon repair required. Proceed to step 6.
6	6	A5000	TP5006	RED GREEN	Defective A5100	Replace A5100. Proceed to step 7.
7	5	A5000	TP5012	RED GREEN	Defective connections to A5000.	Stop test, higher echelon repair required. Proceed to step 8.
8	5	A5000	TP5008	RED GREEN	Defective A5200 or A5300.	Replace A5200. If RED indicator still lights, replace A5300. If RED indicator still lights, stop test; higher echelon repair required. Turn SQUELCH switch to OLD ON. Proceed to step 9.
9	3	A5000	TP5008	RED GREEN	Defective A5200 or A5300.	Replace A5200. If RED indicator still lights, replace A5300. If RED indicator still lights, stop test; higher echelon repair required. Proceed to step 10.
10	--	-----	----------	----------	----------	Turn SQUELCH switch to OLD OFF. Connect H-140/GR to AUDIO connector. If no noise is heard in H-140/GR, trouble is external to A5000. Remove H-140/GR.

d. Localizing Troubles in Intermediate Frequency Assembly A4000. Loosen the two captive screws which hold intermediate frequency (if.) assembly A4000 in place and swing it out until the brace locks. Perform the procedures given in the chart below. Follow the steps in the order given.

Step	Selector switch position	Point measured		Indicator lighted	Trouble	Procedure
		Module	Test point			
1	5	A4000	TP4007	RED GREEN		Proceed to step 2. Connect the test probe to TP5012 and then to

Step	Selector switch position	Point measured		Indicator lighted	Trouble	Procedure
		Module	Test point			
						TP5013 and assembly A5000. If RED indicator lights on both, there are defective connections to A4000. Stop test; higher echelon repair required.
2	A	A4000	TP4006	RED GREEN	Defective connections to A4000.	Stop test; higher echelon repair required. Proceed to step 3.
3	A	A4000	TP4008	RED GREEN	Defective A4200	Replace A4200. Proceed to step 4.
4	13	A4000	TP4001	RED GREEN	Defective A4200, A4100, A1000, or defective connections to A4000.	Replace A4200. If RED indicator still lights, replace A4100. If RED indicator still lights, stop test; higher echelon required. Proceed to step 5.
5	5	A4000	TP4007	RED GREEN	Defective A4300 Defective A1000 or connections to A4000.	Replace A4300. Stop test; higher echelon repair required.

e. Localizing Troubles in Crystal Reference System Assembly A3000. To localize trouble in A3000, perform the procedures given in the chart below. Follow the steps in the order given.

Step	Selector switch position	Point measured		Indicator lighted	Probable trouble	Procedure
		Module	Test point			
1	12	A3000	TP3004	RED GREEN		Proceed to step 2. Stop test; higher echelon repair required.
2	A	A3000	TP3005	RED GREEN	+16 vdc not available at A3000.	Stop test; higher echelon repair required. Proceed to step 3.
3	A	A3000	TP3012	RED GREEN	Defective A3500	Replace A3500. Proceed to step 4.
4	18	A3000	TP3014	RED GREEN	Defective A1000, connections to A3000, or FL3002.	Stop test; higher echelon repair required. Proceed to step 5.
5	14	A3000	TP3015	RED GREEN	Defective A3100	Replace A3100. Proceed to step 6.
6	14	A3000	TP3013	RED GREEN	Defective FL3001	Stop test; higher echelon repair required. Proceed to step 7.
7	16	A3000	TP3009	RED GREEN	Defective A3200, A3300, A3400, FL3003, or A2000.	Replace A3200; repeat test. If RED indicator lights, replace A3300, and repeat test. If RED indicator lights, replace A3400. If RED indicator still lights, stop test; higher echelon repair required. Proceed to step 8.

Step	Selector switch position	Point measured		Indicator lighted	Probable trouble	Procedure
		Module	Test point			
8	17	A3000	TP3007	RED GREEN	Defective A3500 ---	Replace A3500. Proceed to step 9.
9	15	A3000	TP3004	RED GREEN	Defective A3500 ---	Replace A3500. Proceed to step 10.
10	17	A3000	TP3006	RED GREEN	Defective A3600 or FL3005. ---	Replace A3600. If RED indicator still lights, stop test; higher echelon repair required. Proceed to step 11.
11	A	A3000	TP3002	Rotate MC-TUNE control and, at the same time, watch indicator lights. Indication should be red, green momentarily, and then red. If above indication is not obtained.	--- Defective A2100, K3001, or defective connections to A3000.	Return MC-TUNE control to original setting; proceed to step 12. Replace A2100. If correct indication is not obtained, replace K3001. If correct indication is still not obtained, stop test; higher echelon repair required.
12	12		TP3004	RED GREEN	Defective A3600, A1000, A2000, or connections to A3000. A3000 is good	Replace A3600 and repeat test. If RED indicator still lights, replace A3700. If RED indicator still lights, stop test; higher echelon repair required. Stop test; higher echelon repair required.

15. Testing Modules in Receiver-Transmitter, Radio RT-246/VRC or RT-524/VRC

This procedure gives detailed instructions for testing an RT-246/VRC or RT-524/VRC, using Test Set, Radio AN/VRM-1. Perform the tests in the order given. When instructions direct the replacement of a module to correct a trouble, repeat the test after replacement of the module to be sure that this action actually corrects the trouble. If the instructions direct the substitution of a new module and this does not correct the trouble, replace the new module with the one originally installed. Be sure to connect the ground connector on the test (fig. 3) to chassis ground before attempting a test. Condensed operating instructions are provided on the operating instructions plates mounted in the cover of the TS-1777/VRM-1 and are shown in figures 7 and 8. Figures 9 and 10 show the location of test points in the RT-246/VRC and RT-524/VRC.

a. Preliminary Procedure.

(1) Make the connections for testing modules in an RT-246/VRC or RT-524/VRC as instructed in paragraph 12.

(2) Adjust the RT246/VRC or RT-524/VRC controls as listed in the following chart.

Control	Position or indication
SQUELCH	OLD OFF
POWER	LOW
BAND	A
MC-TUNE-KC	35.50 mc
VOLUME	Fully clockwise
SPEAKER (RT-524/VRC only)	OFF

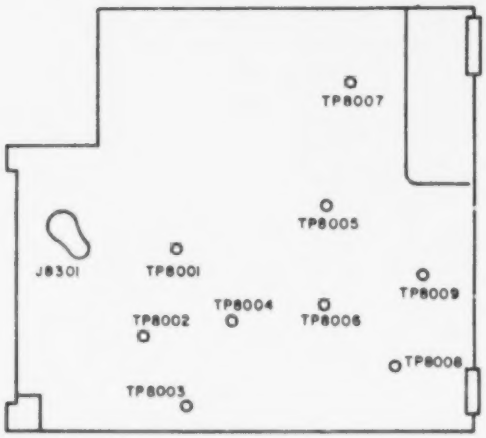


Figure 10. Test point location on assembly A8000 of Receiver-Transmitters, Radio RT-246/VRC and RT-524/VRC.

(3) Place the RT-246/VRC or RT-524/VRC on its left side, loosen the captive screws which hold assemblies A3000 and A8000 in place, and swing the assemblies out until the braces lock.

(4) Set the TS-1777/VRM-1 ON-OFF switch to ON; note that the RED indicator lights.

(5) Remove connector P6001 on cable W407 from connector J6001 on assembly A6000.

b. Sectionalizing Troubles. Perform the procedures given in paragraph 14*b* above.

c. Localizing Troubles in Receiver Section. Perform the procedures given in paragraph 14*c*, *d*, and *e*.

***Warning:* Extremely dangerous voltages of 275 and 700 volts dc exist in the RT-246/VRC or RT-524/VRC when the M-80/GR push-to-talk switch is pressed. Take all necessary precautions to protect personnel from contact with these voltages.**

d. Localizing Troubles in Modulator Assembly A8000. Perform the procedures given in the chart below when power output is apparently low, no sidetone is heard, or transmitted signal is not received on the proper channel at a distant receiver that is known to be good. Follow the steps in the order given. In each step, press the push-to-talk switch on the M-80/GR, make the test as directed, and release the push-to-talk switch.

Step	Selector switch position	Point measured		Indicator lighted	Probable trouble	Procedure
		Module	Test point			
1	A	A8000	TP8001 -------	RED ----------	Defective K403 --------	Replace K403.
				GREEN --------	----------	Proceed to step 2.
2	8	A8000	TP8006 -------	RED ----------	Defective A85000 ------	Replace A8500.
				GREEN --------	----------	Proceed to step 3.
3	7	A8000	TP8003 -------	RED ----------	Defective W409, W202/W402, W403, W404, W408, W303, A8300, or A8200.	Check W409, W202/W402, W403, W404, W408, and W303 by substitution and repeat test. If RED indicator still lights, replace A8300 and repeat test. If RED indicator still lights, replace A8200 and repeat test. If RED indicator still lights, stop test; higher echelon repair required.
				GREEN --------	----------	Proceed to step 4.
4	9	A8000	TP8005 -------	RED ----------	Defective A8100 or A8200.	Replace A8100 and repeat test. If RED indicator still lights, replace A8200 and repeat test. If RED indicator still lights, stop test; higher

Step	Selector switch position	Point measured		Indicator lighted	Probable trouble	Procedure
		Module	Test point			
				GREEN --------	----------	echelon repair required. Remove P6003 on cable W303 from connector J6003 on A6000 and proceed to step 5.
5	6	A8000	TP8008 -------	RED ----------	Defective A8400 -------	Replace A8400.
				GREEN --------	----------	Replace P6003 on cable W303 into connector J6003 on A6000 and proceed to step 6.
6	3	A8000	TP8007 -------	RED ----------	Defective A8500, A5200, A5300, or connections to A5000 or A8000.	Replace A8500 and repeat test. If RED indicator still lights, replace A5200 and repeat test. If RED indicator still lights, replace A5300 and repeat test. If RED indicator still lights, stop test; higher echelon repair required.
				GREEN --------	----------	Proceed to step 7.
7	7					Connect H-140/GR to SPKR connector, press push-to-talk switch of M-80/GR, and speak into M-80/GR. If no sidetone is heard in H-140/GR, replace A8500.

16. Stopping Procedure

Caution: Always remove the test probe from the test point before turning the ON-OFF switch to OFF or removing power to the TS-1777/VRM-1.

a. Receiver, Radio R-442/VRC Tests.

(1) Set the R-442/VRC POWER switch to OFF.

(2) Set the TS-1777/VRM-1 ON-OFF switch to OFF.

(3) Remove the connections as instructed in paragraph 12. Place the test probe in the test probe holder and loop the test probe cable assembly around the handles. Place the CX-7899/VRM-1 in its storage compartment.

(4) Secure the operating instructions plates with the operating instructions plates latch (fig. 3).

(5) Place the cover over the front of the TS-1777/VRM-1 and close the six latches (fig. 3).

b. Receiver-Transmitter, Radio RT-246/VRC or RT-524/VRC Tests.

(1) Turn the RT-246/VRC or RT-524/VRC POWER switch to OFF-BREAKER RESET.

(2) Set the TS-1777/VRM-1 ON-OFF switch to OFF.

(3) Remove the connections as instructed in paragraph 12. Place the test probe in the test probe holder and loop the test probe cable assembly around the handles. Place the CX-7899/VRM-1 in its storage compartment.

(4) Connect connector P6001 on cable W407 to connector J6001 on assembly A6000.

(5) Secure the operating instructions plates with the operating instructions plates latch (fig. 3).

(6) Place the cover over the front of the TS-1777/VRM-1 and close the six latches (fig. 3).

CHAPTER 4

OPERATOR'S MAINTENANCE INSTRUCTIONS

17. Scope of Operator's Maintenance

a. The following is a list of maintenance duties normally performed by the operator of Test Set, Radio AN/VRM-1. These procedures do not require special tools or test equipment.

b. Operator's maintenance for the AN/VRM-1 consists of the following:

(1) Preventive maintenance (para 18).
(2) Visual inspection (para 19).
(3) Operational check (para 20).
(4) Replacement of defective fuse and fuse cap (para 21).
(5) Replacement of defective lamp and jewel (para 21).

18. Preventive Maintenance

a. DA Form 11-266. DA Form 11-266 (fig. 11) is a preventive maintenance checklist to be used by the operator. Items not applicable to the AN/VRM-1 are lined out. Follow the instructions given on the form.

b. Items. The information shown in this subparagraph is supplementary to DA Form 11-266. The item numbers correspond to the ITEM numbers on the form.

Item	Maintenance procedures
	Warning: **Cleaning compound is flammable and its fumes are toxic. Do not use near a flame; provide adequate ventilation.**
1	Use a clean cloth to remove dust, dirt, moisture, and grease from the TS-1777/VRM-1 front panel, case, and cover. If necessary, wet the cloth with Cleaning Compound (Federal stock No. 7930-395-9542) and then wipe dry with a clean, dry cloth.
2	The indicator lamps, jewels, and fuse cap should be firmly seated.
3	The selector control knob should work smoothly, be tight on its shaft, and should not bind. Be sure that the knob does not rub against the front panel.
4	Use the operational checklist (para 20) to check the AN/VRM-1 for normal operation.
5	Check CX-7899/VRM-1 and the PROBE cable for breaks, cuts, kinks, deterioration, and fraying.
7	Check the six latches (fig. 3) for looseness.
10	Inspect the metal surfaces of the TS-1777/VRC and the connectors of the CX-7899/VRM-1 for rust and corrosion.

19. Visual Inspection

a. When the AN/VRM-1 fails to perform properly, remove the power and check for the conditions listed below. *Do not check with power on.*

(1) Wrong setting of selector switch (para 14 and 15).
(2) CX-7899/VRM-1 disconnected or connected improperly.
(3) Burned-out fuse (usually indicates some other fault).

b. If the above checks do not locate the trouble, proceed to the operational checklist (para 20).

20. Operational Checklist

a. General. The operational checklist will help the operator to locate the trouble quickly. The corrective measures are used to repair the trouble. If the measures suggested do not restore normal equipment performance, troubleshooting at a higher echelon is required. Note on the repair tag what corrective measures were taken and how the equipment performed at the time of failure.

b. Procedure. Connect the AN/VRM-1 as instructed in paragraph 12. Perform the steps given in *c* below in the order given. Observe the operation of the AN/VRM-1 and perform any corrective measures necessary.

c. Operational Checklist.

Step	Action	Normal indication	Corrective measure
1	Set ON-OFF switch to ON --------	RED indicator lights ----------	Replace lamp (para 21). Replace fuse (para 21).

Step	Action	Normal indication	Corrective measure
			Check seating of CX-7899/VRM-1 connectors at POWER connector on TS-1777/VRM-1 and connector J14 or J24 on MT-1898/VRC or MT-1029/VRC. Check CX-7899/VRM-1 by substitution.
2	Turn selector switch to A and insert test probe tip in test jack A.	GREEN indicator lights ---------	Replace lamp (para 21).
3	Remove test probe tip from test jack A.	RED indicator lights ----------	Higher echelon repair required.
4	Rotate selector switch through positions 2 through 20.	RED indicator remains lighted as selector switch is rotated.	Higher echelon repair required.

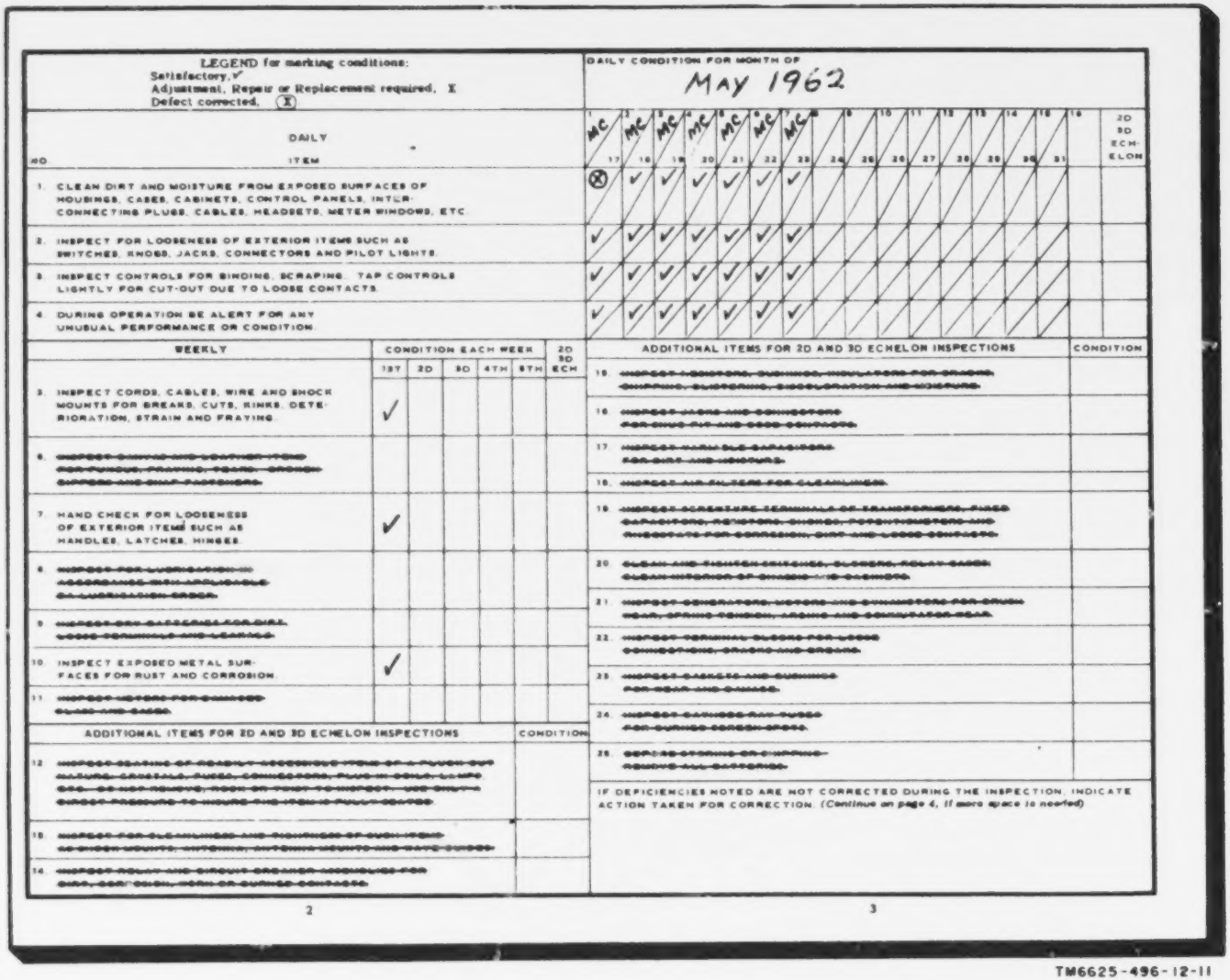
21. Replacement of Lamps and Fuses (fig. 12)

a. Removal and Replacement of Fuse and Fuse Cap.

(1) Turn the fuse cap and fuse counterclockwise and remove them from the fuseholder.
(2) Pull the defective fuse from the fuse cap.
(3) Insert a new fuse into the fuse cap.
(4) To replace the fuse cap and fuse, insert them in the fuseholder and turn them clockwise.

b. Removal and Replacement of Indicator Lamps.

(1) Turn the indicator lamp and jewel assembly counterclockwise and remove it from the lampholder.
(2) Pull the defective lamp out of the jewel, being careful not to lose the O-ring seal.
(3) Insert a new lamp into the jewel.
(4) Turn the indicator lamp and jewel assembly clockwise to install it. Be sure its O-ring seal is tight but do not overtighten.



LEGEND for marking conditions:
Satisfactory, ✓
Adjustment, Repair or Replacement required, X
Defect corrected, (X)

DAILY CONDITION FOR MONTH OF May 1962

NO	DAILY ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	2D 3D ECHELON
		MC	MC	MC	MC	MC	MC	MC										
		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
1.	CLEAN DIRT AND MOISTURE FROM EXPOSED SURFACES OF HOUSINGS, CASES, CABINETS, CONTROL PANELS, INTER-CONNECTING PLUGS, CABLES, HEADSETS, METER WINDOWS, ETC.	(X)	✓	✓	✓	✓	✓	✓										
2.	INSPECT FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS SWITCHES, KNOBS, JACKS, CONNECTORS AND PILOT LIGHTS.	✓	✓	✓	✓	✓	✓	✓										
3.	INSPECT CONTROLS FOR BINDING, SCRAPING. TAP CONTROLS LIGHTLY FOR CUT-OUT DUE TO LOOSE CONTACTS.	✓	✓	✓	✓	✓	✓	✓										
4.	DURING OPERATION BE ALERT FOR ANY UNUSUAL PERFORMANCE OR CONDITION.	✓	✓	✓	✓	✓	✓	✓										

WEEKLY	CONDITION EACH WEEK					2D 3D ECH
	1ST	2D	3D	4TH	5TH	
5. INSPECT CORDS, CABLES, WIRE AND SHOCK MOUNTS FOR BREAKS, CUTS, KINKS, DETERIORATION, STRAIN AND FRAYING.	✓					
6. [illegible]						
7. HAND CHECK FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS HANDLES, LATCHES, HINGES.	✓					
8. [illegible]						
9. [illegible]						
10. INSPECT EXPOSED METAL SURFACES FOR RUST AND CORROSION.	✓					
11. [illegible]						

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
12. [illegible]	
13. [illegible]	
14. [illegible]	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. [illegible]	
16. [illegible]	
17. [illegible]	
18. [illegible]	
19. [illegible]	
20. [illegible]	
21. [illegible]	
22. [illegible]	
23. [illegible]	
24. [illegible]	
25. [illegible]	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION. *(Continue on page 4, if more space is needed)*

2 3

TM6625-496-12-11

Figure 11. DA Form 11-266, pages 2 and 3.

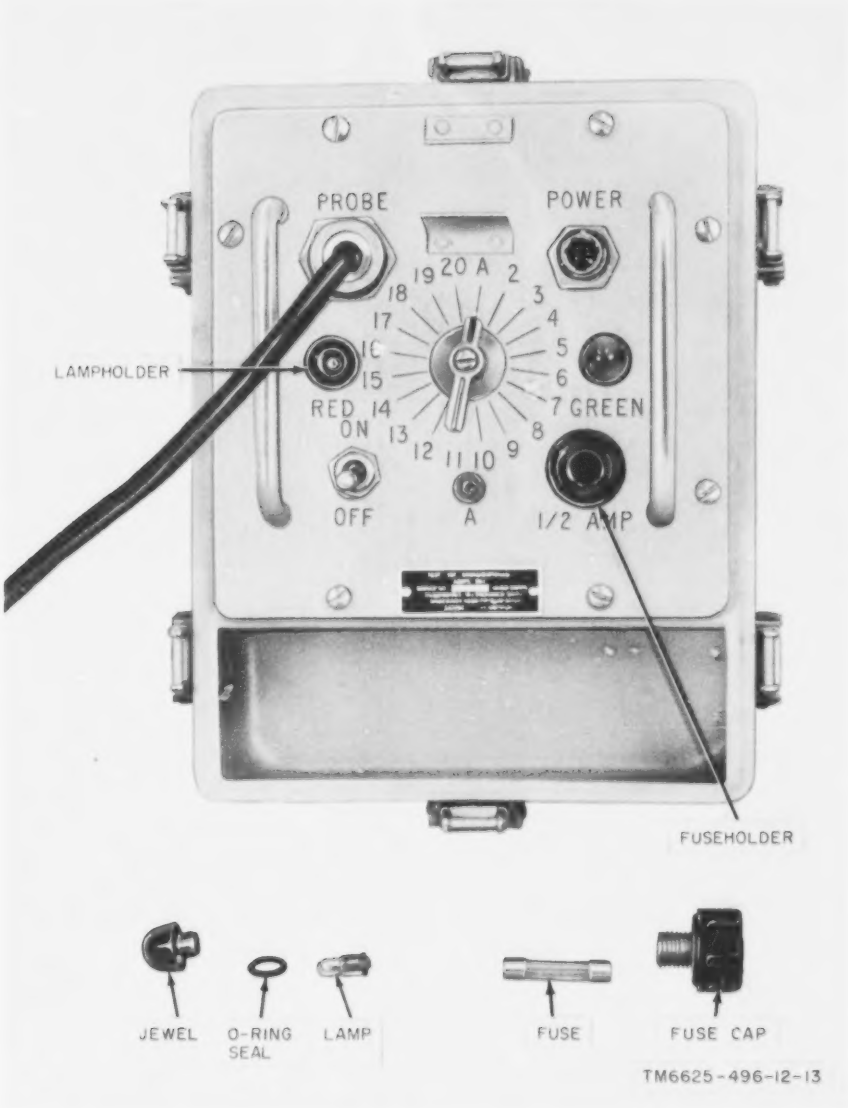


Figure 12. Test Set, Radio TS-1777/VRM-1, fuse and indicator lamp removed.

CHAPTER 5

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

22. Organizational Maintenance Duties

This chapter covers organizational maintenance of Test Set, Radio AN/VRM-1. Organizational maintenance of the AN/VRM-1 consists of the following:

a. Preventive maintenance (para 24).
b. Visual inspection (para 25).
c. Troubleshooting (para 26).
d. Replacement of test probe tip (para 27).
e. Replacement of operating instruction plates (para 28).

23. Tools, Materials, and Test Equipment Required

A list of parts normally stocked for organizational maintenance is contained in TM 11-6625-496-20P. The tools, materials, and test equipment required for organizational maintenance are listed below.

Warning: **Cleaning compound is flammable and its fumes are toxic. Do not use near a flame; provide adequate ventilation.**

a. Tool Equipment TK-115/U.
b. Cleaning Compound (Federal stock No. 7930-395-9542).
c. Sandpaper No. 000.
d. Multimeter AN/URM-105.

24. Preventive Maintenance

a. DA Form 11-266. DA Form 11-266 (fig. 13) is a preventive maintenance checklist to be used by organizational maintenance personnel. Items not applicable to the AN/VRM-1 are lined out. Additional preing items 1, 2, 3, and 5 is contained in paragraph 18. Follow the instructions given on the form.

b. Items. The information shown in this subparagraph is supplementary to DA Form 11-266. The item number corresponds to the ITEM number on the form.

Item	Maintenance procedure
7	The operating instructions plates should be firmly seated in their mounting blocks (para 28). The spare fuse, lamp, and test probe tip retainers should be screwed tightly to the cover (fig. 3).
10	Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the bare metal to protect it from further corrosion. Refer to applicable cleaning and refinishing practices specified in TM 9-2851.
23	The gasket on the cover (fig. 3) should be free of cuts, tears, and obvious depressions.

25. Visual Inspection

a. When Test Set, Radio AN/VRM-1 fails to perform properly, turn off the power and check for the conditions listed below. *Do not check with power on.*

(1) Improper connections of equipment (para 12).
(2) Improper seating of CX-7899/VRM-1 connectors.
(3) Defective ground connection of test probe.
(4) Improper power source voltage.

b. If the above checks do not locate the trouble, proceed to the equipment performance checklist (para 26).

26. Equipment Performance Checklist

a. General. The equipment performance checklist provides a procedure for systematically checking the AN/VRM-1 performance. The corrective measures that organizational maintenance personnel can perform are given in the *Corrective* measures column. When using the checklist, start at the beginning and follow each step in order. If the corrective measures indicated do not repair the equipment, troubleshooting is required by higher echelon. Note on the repair tag how the equipment performed, and what corrective measures were taken.

b. Procedure. Check the performance

MAINTENANCE CHECK LIST FOR SIGNAL EQUIPMENT
TEST EQUIPMENT
(AR 750-625)

EQUIPMENT NOMENCLATURE: TEST SET, RADIO AN/VRM-1

EQUIPMENT SERIAL NUMBER: 000

INSTRUCTIONS

This form may be used for a period of one month by using the correct dates and weeks of the month. It is to be used as a Preventive Maintenance check list for Signal equipment in actual use, or for a check on equipment prior to issue.

1. For detailed Preventive Maintenance instructions see:
   a. The Technical Manual *(in TM 11 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   b. The Supply Bulletin *(SB 11-100 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   c. The Department of the Army Lubrication Order. *(See DA Pamphlet Number 310-4)*

2. The following action will be taken by either the Communications Officer/ Chief for 1st echelon, or the Inspector for higher echelon
   a. Enter Equipment Nomenclature and Serial Number.
   b. Strike out items that do not apply to the equipment.

3. Operator/Inspector will enter in the columns entitled CONDITION, on the proper line, a notation regarding the condition, using symbols specified under LEGEND.

4. After operator completes each daily inspection he will initial over the appropriate dates under "Daily Condition for Month", then return form to his supervisor.

FOLD

TYPE OF INSPECTION: PREVENTIVE MAINTENANCE

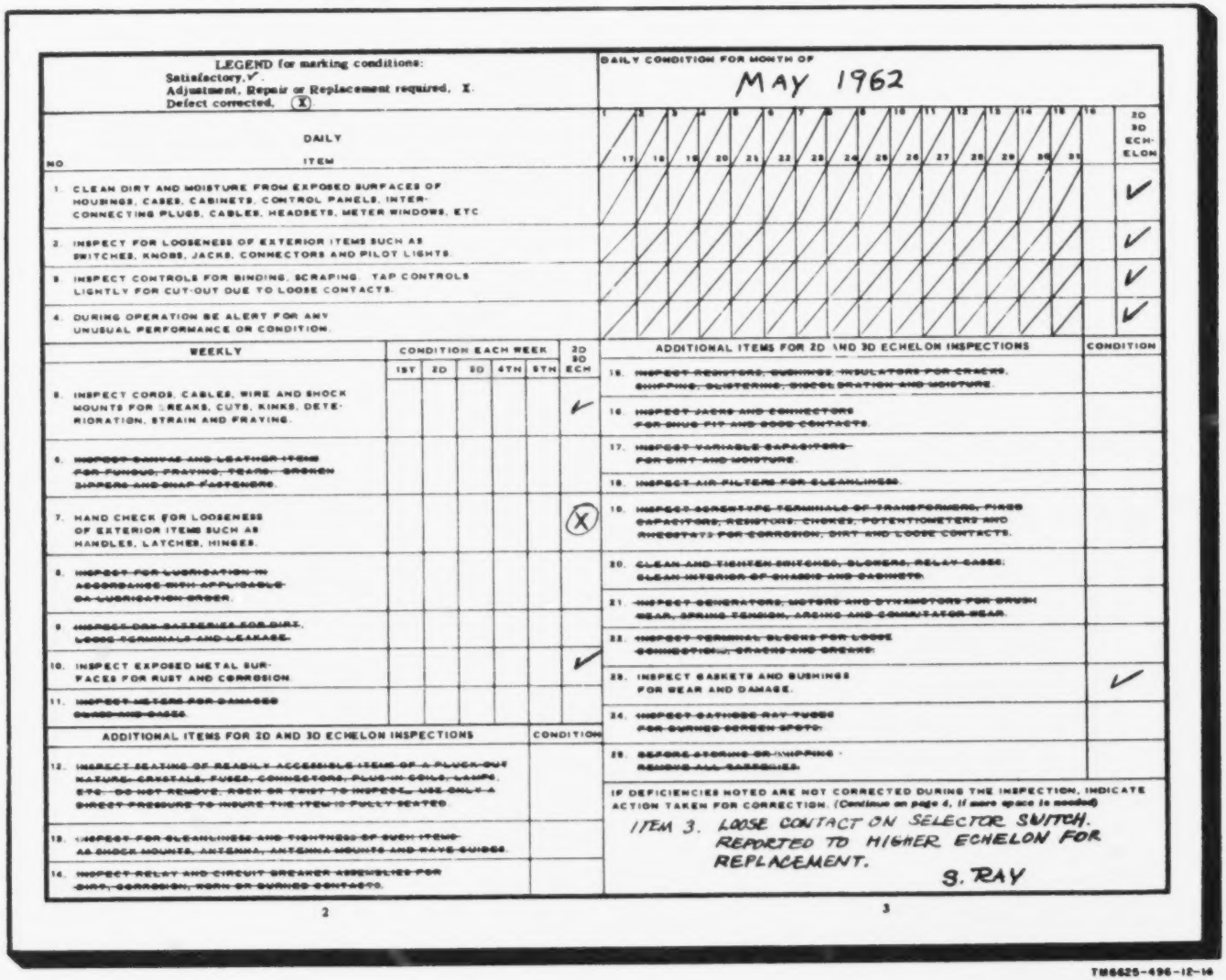
OPERATOR	2/3 ECHELON	DATE	SIGNATURE
	✓	7 MAY 1962	Stephen Ray

4

U. S. GOVERNMENT PRINTING OFFICE 1957 O—427138

DA FORM 1 MAY 57 11-266

Figure 13. DA Form 11-266, pages 1 and 4.



LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF MAY 1962

NO	DAILY ITEM	2D 3D ECHELON
1.	CLEAN DIRT AND MOISTURE FROM EXPOSED SURFACES OF HOUSINGS, CASES, CABINETS, CONTROL PANELS, INTERCONNECTING PLUGS, CABLES, HEADSETS, METER WINDOWS, ETC	✓
2.	INSPECT FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS SWITCHES, KNOBS, JACKS, CONNECTORS AND PILOT LIGHTS.	✓
3.	INSPECT CONTROLS FOR BINDING, SCRAPING. TAP CONTROLS LIGHTLY FOR CUT-OUT DUE TO LOOSE CONTACTS.	✓
4.	DURING OPERATION BE ALERT FOR ANY UNUSUAL PERFORMANCE OR CONDITION.	✓

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D 3D ECH
5. INSPECT CORDS, CABLES, WIRE AND SHOCK MOUNTS FOR BREAKS, CUTS, KINKS, DETERIORATION, STRAIN AND FRAYING.						✓
6. ~~INSPECT CANVAS AND LEATHER ITEMS FOR FUNGUS, FRAYING, TEARS, BROKEN ZIPPERS AND SNAP FASTENERS.~~						
7. HAND CHECK FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS HANDLES, LATCHES, HINGES.						(X)
8. ~~INSPECT FOR LUBRICATION IN ACCORDANCE WITH APPLICABLE LUBRICATION ORDER.~~						
9. ~~INSPECT DRY BATTERIES FOR DIRT, LOOSE TERMINALS AND LEAKAGE.~~						
10. INSPECT EXPOSED METAL SURFACES FOR RUST AND CORROSION.						✓
11. ~~INSPECT METERS FOR DAMAGED GUARD RING CASES.~~						

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
12. ~~INSPECT SEATING OF READILY ACCESSIBLE ITEMS OF A PLUG-OUT NATURE; CRYSTALS, FUSES, CONNECTORS, PLUG-IN COILS, LAMPS, ETC. DO NOT REMOVE, ROCK OR TWIST TO INSPECT, USE ONLY A DIRECT PRESSURE TO INSURE THE ITEM IS FULLY SEATED.~~	
13. ~~INSPECT FOR CLEANLINESS AND TIGHTNESS OF SUCH ITEMS AS SHOCK MOUNTS, ANTENNA, ANTENNA MOUNTS AND WAVE GUIDES.~~	
14. ~~INSPECT RELAY AND CIRCUIT BREAKER ASSEMBLIES FOR DIRT, CORROSION, WORN OR BURNED CONTACTS.~~	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. ~~INSPECT RESISTORS, BUSHINGS, INSULATORS FOR CRACKS, CHIPPING, BLISTERING, DISCOLORATION AND MOISTURE.~~	
16. ~~INSPECT JACKS AND CONNECTORS FOR SNUG FIT AND GOOD CONTACTS.~~	
17. ~~INSPECT VARIABLE CAPACITORS FOR DIRT AND MOISTURE.~~	
18. ~~INSPECT AIR FILTERS FOR CLEANLINESS.~~	
19. ~~INSPECT SOLDERING TERMINALS OF TRANSFORMERS, FIXED CAPACITORS, RESISTORS, CHOKES, POTENTIOMETERS AND RHEOSTATS FOR CORROSION, DIRT AND LOOSE CONTACTS.~~	
20. ~~CLEAN AND TIGHTEN SWITCHES, BLOWERS, RELAY CASES. CLEAN INTERIOR OF CHASSIS AND CABINETS.~~	
21. ~~INSPECT GENERATORS, MOTORS AND DYNAMOTORS FOR BRUSH WEAR, SPRING TENSION, ARCING AND COMMUTATOR WEAR.~~	
22. ~~INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.~~	
23. INSPECT GASKETS AND BUSHINGS FOR WEAR AND DAMAGE.	✓
24. ~~INSPECT CATHODE RAY TUBES FOR BURNED SCREEN SPOTS.~~	
25. ~~BEFORE STORING OR SHIPPING REMOVE ALL BATTERIES.~~	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION. (Continue on page 4, if more space is needed)

ITEM 3. LOOSE CONTACT ON SELECTOR SWITCH. REPORTED TO HIGHER ECHELON FOR REPLACEMENT.

S. RAY

2 3

TM6625-496-12-14

Figure 14. DA Form 11-266, pages 2 and 3.

of the AN/VRM-1 as shown in the checklist below. Use an RT-246/VRC or RT-524/VRC with its top and bottom covers removed, an MT-1029/VRC, and an M-80/GR known to be good for the test. For each test, remove the test probe tip from the test point after obtaining a red or green indication.

Warning: **Extremely dangerous voltages of 275 and 700 volts dc exist in the RT-246/VRC or RT-524/VRC when the M-80/GR push-to-talk switch is pressed. Take all necessary precautions to protect personnel and test equipment from damage resulting from careless contact with these voltages.**

c. Equipment Checklist.

	Step	Unit	Action	Normal indication	Corrective measures
START	1	MT-1029/VRC	Connect CX-7899/VRM-1 from connector J24 to POWER connector on TS-1777/VRM-1.		
	2	RT-246/VRC or RT-524/VRC.	Turn POWER switch to OFF, SQUELCH switch to OLD OFF, BAND switch to A, MC-TUNE and KC-TUNE knobs to 35.50 mc, VOLUME control fully clockwise, and SPEAKER switch (RT-524/VRC only) to OFF. Remove connector P6001 from connector J6001.		
	3	MT-1029/VRC	Connect CX-7899/VRM-1 from connector J24 to connector P401 on RT-246/VRC or RT-524/VRC.		
	4	RT-246/VRC or RT-524/VRC.	Connect M-80/GR to MIKE connector.		
	5	RT-246/VRC or RT-524/VRC.	Turn POWER switch to LOW.		
	6	TS-1777/VRM-1.....	Turn selector switch to A.		
EQUIPMENT PERFORMANCE	7	TS-1777/VRM-1.....	Set ON-OFF switch to ON....	RED indicator lights. Proceed to step 9 if indicator lights.	Replace red indicator lamp (para 21). Replace fuse (para 21).
	8	TS-1777/VRM-1.....	Set ON-OFF switch to OFF. Remove CX-7899/VRM-1 from POWER connector on TS-1777/VRM-1 and measure voltage between terminals A and B of the CX-7899/VRM-1 connector with an AN/URM-105.	23.4 to 28.6 volts dc.	Check CX-7899/VRM-1 by substitution.
	9	TS-1777/VRM-1.....	Set ON-OFF switch to ON and insert test probe tip in test jack A on TS-1777/VRM-1.	GREEN indicator lights.	Replace green indicator lamp (para 21).
	10	TS-1777/VRM-1.....	Insert test probe tip in test point TP5010.	GREEN indicator lights.	Higher echelon repair required.
	11	TS-1777/VRM-1.....	Turn selector switch to 2 and insert test probe tip in test point TP5003.	GREEN indicator lights.	Higher echelon repair required.
	12	TS-1777/VRM-1.....	Turn selector switch to 3 and insert test probe tip in test point TP5008.	GREEN indicator lights.	Higher echelon repair required.
	13	TS-1777/VRM-1.....	Turn selector switch to 4 and insert test probe tip in test point TP5005.	GREEN indicator lights.	Higher echelon repair required.
	14	TS-1777/VRM-1.....	Turn selector switch to 5 and insert test probe tip in test point TP4007.	GREEN indicator lights.	Higher echelon repair required.
	15	RT-246/VRC or RT-524/VRC.	Remove connector P6003 from connector J6003.	RED indicator lights.	Higher echelon repair required.

	Step	Unit	Action	Normal indication	Corrective measures
EQUIPMENT PERFORMANCE	16	TS-1777/VRM-1.....	Turn selector switch to 6, insert test probe tip in test point TP8008, and press M-80/GR push-to-talk switch. After test, release switch.	GREEN indicator lights.	Higher echelon repair required.
	17	RT-246/VRC or RT-524/VRC.	Replace connector P6003 in connector J6003.	RED indicator lights.	Higher echelon repair required.
	18	TS-1777/VRM-1.....	Turn selector switch to 7, insert test probe tip in test point TP8003, and press M-80/GR push-to-talk switch. After test, release switch.	GREEN indicator lights.	Higher echelon repair required.
	19	TS-1777/VRM-1.....	Turn selector switch to 8, insert test probe tip in test point TP8006, and press M-80/GR push-to-talk switch. After test, release switch.	GREEN indicator lights.	Higher echelon repair required.
	20	TS-1777/VRM-1.....	Turn selector switch to 9, insert test probe tip in test point TP8005, and press M-80/GR push-to-talk switch. After test, release switch.	GREEN indicator lights.	Higher echelon repair required.
	21	TS-1777/VRM-1.....	Turn selector switch to 10 and insert test probe tip in test point TP5002.	GREEN indicator lights.	Higher echelon repair required.
	22	TS-1777/VRM-1.....	Turn selector switch to 11 and insert test probe tip in test point TP5001.	GREEN indicator lights.	Higher echelon repair required.
	23	TS-1777/VRM-1.....	Turn selector switch to 12 and insert test probe tip in test point TP3004.	GREEN indicator lights.	Higher echelon repair required.
	24	TS-1777/VRM-1.....	Turn selector switch to 13 and insert test probe tip in test point TP4001.	GREEN indicator lights.	Higher echelon repair required.
	25	TS-1777/VRM-1.....	Turn selector switch to 14 and insert test probe tip in test point TP3013.	GREEN indicator lights.	Higher echelon repair required.
	26	TS-1777/VRM-1.....	Turn selector switch to 15 and insert test probe tip in test point TP3004.	GREEN indicator lights.	Higher echelon repair required.
	27	TS-1777/VRM-1.....	Turn selector switch to 16 and insert test probe tip in test point TP3009.	GREEN indicator lights.	Higher echelon repair required.
	28	TS-1777/VRM-1.....	Turn selector switch to 17 and insert test probe tip in test point TP3007.	GREEN indicator lights.	Higher echelon repair required.
	29	TS-1777/VRM-1.....	Turn selector switch to 18 and insert test probe tip in test point TP3014.	GREEN indicator lights.	Higher echelon repair required.
STOP	30	TS-1777/VRM-1.....	Set ON-OFF switch to OFF ..	RED indicator goes out.	Higher echelon repair required.
	31	RT-246/VRC or RT-524/VRC.	Turn POWER switch to OFF, replace connector P6001 in connector J6001, and replace covers.		

27. Removal and Replacement of Test Probe Tip

a. Loosen the screw which holds the spare test probe tip retainer (fig. 3) in place.

b. Remove the spare test probe tip from its retainer.

c. Remove the damaged test probe tip from the test probe assembly with a 1/4-inch wrench.

d. Replace the test probe tip in the test probe assembly with the 1/4-inch wrench.

28. Removal and Replacement of Operating Instructions Plates (fig. 3)

a. Removal.

(1) Remove the two screws and washers which hold the upper hinge block in place.

(2) Remove the spare fuse. Remove the two screws, nuts, and washers which hold the spare fuse retainer in place and remove the retainer.

(3) Remove the two screws and washers which hold the lower hinge block and the spare test probe tip retainer in place. Remove the spare test probe tip and its retainer.

(4) Remove the spare lamp. Remove the two screws, nuts, and washers which hold the spare lamp retainer in place and remove the retainer.

(5) Release the operating instructions plates latch. Hold the two operating instructions plates vertically and slide them, the upper and lower hinge blocks, and the hinge pin to the right and out of the hinge block retainers in the cover.

(6) Remove the hinge blocks from the hinge pin.

(7) Remove the hinge pin from the operating instructions plates. Note how the hinge loops of the two plates are arranged. The upper and lower hinge loops of the first plate are are both above the upper and lower hinge loops of the second plate.

b. Replacement.

(1) Arrange the two pages of the operating instructions plates so that the upper and lower hinge loops of the first plate are above those of the second plate, and insert the hinge pin through the hinge loops.

(2) Replace the upper and lower hinge blocks on the hinge pin.

(3) Hold the two operating instructions plates vertically and slide the hinge blocks, hinge pin, and operating instructions plates to the left in the hinge block retainers.

(4) Attach the upper hinge block with the two screws and washers (*a* (1) above).

(5) Attach the lower hinge plate, spare test probe tip retainer, and spare test probe tip with the two screws and washers (*a* (3) above).

(6) Place the operating instructions plates in the normal position and lock with the operating instructions plates latch.

(7) Replace the spare fuse retainer with the two screws, nuts, and washers (*a* (2) above). Replace the spare fuse.

(8) Replace the spare lamp retainer with the two screws, nuts, and washers (*a* (4) above). Replace the spare lamp.

CHAPTER 6

SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

29. Disassembling and Securing Test Set, Radio AN/VRM-1

a. Disconnect the CX-7899/VRM-1 from the equipment being tested, the mounting, and the POWER connector of the TS-1777/VRM-1.

b. Store the CX-7899/VRM-1 in the cable storage area of the TS-1777/VRM-1 (fig. 3).

c. Wrap the test probe cable around the handles of the TS-1777/VRM-1 and place the test probe in its holder (fig. 3). Check to be sure that all front panel retaining screws are tight.

d. Inspect the cover of the TS-1777/VRM-1 to be sure that the spare fuse, lamp, and test probe tip are firmly seated in place. Check to be sure that the operating instructions plates latch (fig. 3) has locked the plates in place.

e. Place the cover of the TS-1777/VRM-1 over its front panel and case and secure it with the six latches (fig. 3).

30. Repackaging for Shipment or Limited Storage

The exact procedure for repackaging depends on the material available and the conditions under which the AN/VRM-1 is to be shipped or stored. Adapt the procedures outlined below whenever possible. The original packaging information (para 10 and 11) will be helpful. Use the original packing material if available.

a. Material Requirement. Materials in the chart below are required for packaging the equipment. For stock numbers of materials, refer to SB 38-100.

Material	Approximate quantity
Waterproof paper	10 square feet
Waterproof tape	14 feet
Corrugated cardboard	10 square feet
Pressure-sensitive tape	5-1/2 feet
Filler material	1 pound
Wooden packing case	1

b. Packaging.

(1) *Test Set, Radio AN/VRM-1.* Cushion the AN/VRM-1 on all surfaces with pads of filler material. Secure the pads to the AN/VRM-1 with pressure-sensitive tape. Place a cushioned unit within a wrap of corrugated cardboard. Secure the wrap with pressure-sensitive tape. Wrap the package with waterproof paper and secure it with waterproof tape.

(2) *Technical manuals.* Wrap the technical manuals in waterproof paper and secure with waterproof tape.

c. Packing. Pack the packaged AN/VRM-1 in a wooden case as in the original packing. If the original wooden packing case is not available, construct a wooden case large enough to allow 1-inch clearance on all sides. Line the inside of the case with waterproof paper and corrugated cardboard. Place the wrapped equipment in the wooden case and nail the wooden cover.

Section II. DEMOLITION TO PREVENT ENEMY USE

31. Authority for Demolition

Demolition of the AN/VRM-1 will be accomplished only upon the order of the commander. The destruction procedure

outlined in paragraph 32 will be used to prevent further use of the equipment.

32. Methods of Destruction

Any of the methods of destruction given oelow may be used. The time available will be a major determining factor for the method used. The tactical situation will determine in what manner the destruction order will be carried out.

a. Smash. Smash the controls and connectors of the TS-1777/VRM-1 with the heaviest tool available if time does not permit removing the TS-1777/VRM-1 from its case; use sledges, axes, hammers, crowbars, and any other heavy tools available to smash the interior of the TS-1777/VRM-1.

b. Cut. Cut cabling and wiring. Cut all cables in a number of places; use axes, machetes, and similar tools. If time permits, slash the interior wiring.

c. Burn. Burn as much of the AN/VRM-1 as is flammable; use gasoline, oil, flamethrower, or similar tools. Burn instruction literature first. Pour gasoline on the cut cables and ignite it. Use a flamethrower to burn the spare parts or pour gasoline on the spares and ignite it. Use incendiary grenades to complete destruction of the equipment interiors.

Warning: **Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.**

d. Explode. Use explosives to complete demolition or to cause maximum destruction when time does not permit demolition by other means. Powder charges, fragmentation grenades, or incendiary grenades may be used. Place the explosive charges against the front panel of the TS-1777/VRM-1 to cause maximum destruction; the second most effective location is against the top of the case of the TS-1777/VRM-1. Incendiary grenades usually are most effective if destruction of small parts and wiring is desired.

e. Dispose. Bury or scatter the destroyed parts in slit trenches, foxholes, or throw them into streams.

APPENDIX I

REFERENCES

The following is a list of applicable references available to the operator and organizational repairman of Test Set, Radio AN/VRM-1:

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.
SB 11-525	Operation Modex, Modular Study for Radio Sets AN/VRC-12 and -43 through -49.
SB 38-100	Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used by the Army.
TM 9-2851	Painting Instructions for Field Use.
TM 11-5820-401-10	Operator's Manual: Radio Sets AN/VRC-12 and AN/VRC-43, -44, -45, -46, -47, -48, and -49.
TM 11-5820-401-20	Organizational Maintenance Manual: Radio Sets AN/VRC-12 and AN/VRC-43, -44, -45, -46, -47, -48, and -49.
TM 11-6625-203-12	Operation and Organizational Maintenance: Multimeter AN/URM-105, including Multimeter ME-77/U.
TM 11-6625-496-20P	Organizational Maintenance Repair Parts and Special Tool List, Test Set, Radio AN/VRM-1.

APPENDIX II

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

1. General

This appendix lists items supplied for initial operation and for running spares. The list includes tools, accessories, parts, and material issued *as part* of the major end item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

2. Columns

a. Source, Maintenance, and Recoverability Code. Not used.

b. Federal Stock Number. This column lists the 11-digit Federal stock number.

c. Designation by Model. Not used.

d. Description. Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description on the requisition.

e. Unit of Issue. The unit of issue is *each* unless otherwise indicated and is the supply term by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

f. Expendability. Nonexpendable items are indicated by NX. Expendable items are not annotated.

g. Quantity Authorized. Under "Items Comprising an Operable Equipment", the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spares and Accessory Items", the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

h. Illustrations. The "Figure No." column lists the figure and reference numbers used for identification of the items in the illustration.

Section II. FUNCTIONAL PARTS LIST, AN/VRM-1

(1) SOURCE MAINTENANCE AND RECOVERABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPENDABILITY	(7) QUANTITY ATTACHED	(8) ILLUSTRATIONS FIGURE NO	(9) ILLUSTRATIONS ITEM NO
	6625-892-5542		TEST SET, RADIO AN VRM-1: go no go defective module locator to detect faulty modules of Radio Sets AN VRC 12, AN VRC 43 thru 49; oper pwr reqt: dc 28 v; single item w/carrying case: 8 1/2 in lg x 7 1/16 in w x 6 1/2 in h; c o 1 ea Test Set, Radio TS 1777/VRM-1; Cable Assy, Special Purpose, Elec, Branched CX-7899/VRM-1; Avco part 837149		NX		2	
			ITEMS COMPRISING AN OPERABLE EQUIPMENT					
	6625-892-5543		TEST SET, RADIO TS-1777/VRM-1: type of tests: voltage tests; audio signal or noise level; intermediate freq signal or noise level and sensitivity; crystal ref system freq; modulator pwr output and distortion; test set indicates if module under test is good or bad by two indicator lights; oper pwr reqt: dc 28 v; alum case; 8-1/2 in lg x 7 1/16 in w x 6 1/2 in h; Avco part 837170 (Not installed) (Not mounted)		NX	1	2	
	6625-439-8762		CABLE ASSEMBLY, SPECIAL PURPOSE ELECTRICAL, BRANCHED CX-7899/VRM-1: interconnecting pwr cable f/oper TS-1777/VRM-1 and the item under test from the same Pwr Supply; 2 cond stranded No. 16 AWG rubber ins, MIL type CO-02MOF(2-16)0335; 2 cond stranded No. 20 AWG rubber ins, MIL type CO-02LOF(2-20)0915; No. 16 AWG branch approx 5 ft 4 in lg; No. 2 AWG branch 1 ft 4 in lg; 5 ft 4 in lg o a; Avco part No. 837000 (Not installed) (Not mounted)		NX	1	2	
			RUNNING SPARES AND ACCESSORY ITEMS					
	5920-281-0224		FUSE, CARTRIDGE: 0.500 amp; 250 v max; 1.250 in lg x 0.250 in dia; MIL type MS90078-7-1 (Not installed) (Mounted in equip)			1	2	
	6240-155-7836		LAMP, INCANDESCENT: 0.04 amps; 28 vdc; MIL type MS25237-327 (Not installed) (Not mounted)			1	2	
	6625-329-3312		TIP, TEST PROBE: 0.750 in lg x 0.285 in w x 0.250 in h; Avco part 837051 (Not installed) (Mounted in equip)			1	2	

APPENDIX III
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

1. General

a. This appendix assigns maintenance functions to be performed on components, assemblies, and subassemblies by the lowest appropriate maintenance echelon.

b. Columns in the maintenance allocation chart are as follows:

(1) *Part or Component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the component. Components, assemblies, and subassemblies are listed in top-down order. That is, the assemblies which are part of a component are listed immediately below that component, and the subassemblies which are part of an assembly are listed immediately below that assembly. Each generation breakdown (components, assemblies, or subassemblies) is listed in disassembly order or alphabetical order.

(2) *Maintenance function.* This column indicates the various maintenance functions allocated to the echelons.

(a) Service. To clean, to preserve, and to replenish lubricants.

(b) Adjust. To regulate periodically to prevent malfunction.

(c) Inspect. To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.

(d) Test. To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc.

(e) Replace. To substitute serviceable components, assemblies, or subassemblies, for unserviceable components, assemblies, or subassemblies.

(f) Repair. To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This function includes but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

(g) Align. To adjust two or more components of an electrical system so that their functions are properly synchronized.

(h) Calibrate. To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.

(i) Overhaul. To restore an item to *completely serviceable* condition as prescribed by serviceability standards developed and published by heads of technical services. This is accomplished through employment of the technique of "Inspect and Repair Only as Necessary" (IROAN). Maximum utilization of diagnostic and test equipment is combined with minimum disassembly of the item during the overhaul process.

(j) Rebuild. To restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection of all parts or components, repair or

replacement of worn or unserviceable elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the item.

(3) *1st, 2d, 3d, 4th, 5th echelons.* The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.

(4) *Tools required.* This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The grouping of codes in this column of the maintenance allocation chart indicates the tool, test, and maintenance equipment required to perform the maintenance function.

(5) *Remarks.* Entries in this column will be utilized when necessary to clarify any of the data cited in the preceding columns.

c. Columns in the allocation of tools for maintenance functions are as follows:

(1) *Tools required for maintenance functions.* This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

(2) *1st, 2d, 3d, 4th, 5th echelon.* The dagger (†) indicates the echelons normally allocated the facility.

(3) *Tool code.* This column lists the tool code assigned.

2. Maintenance by Using Organizations

When this equipment is used by signal service organizations organic to theater headquarters or communication zones to provide theater communications, those maintenance functions allocated up to an including fourth echelon are authorized to the organization operating this equipment.

Section II. MAINTENANCE ALLOCATION CHART

(1) PART OR COMPONENT	(2) MAINTENANCE FUNCTION	(3) 1ST ECH	(4) 2ND ECH	(5) 3RD ECH	(6) 4TH ECH	(7) 5TH ECH	(8) TOOLS REQUIRED	(9) REMARKS
TEST SET, RADIO AN/VRM-1	repair	X						Limited to replacement of running spares and pluck out cable assembly. Tools normally furnished user to perform assigned mission.
					X		1 thru 16	
	rebuild					X	1 thru 16	
TEST SET, RADIO TS-1777/VRM-1	replace	X						
	repair	X						Limited to replacement of running spare and pluck out cable assembly. Tools normally furnished user to perform assigned mission
					X		1 thru 16	
	rebuild					X	1 thru 16	
CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL, BRANCHED CX-7899/VRM-1	replace	X						
	repair				X		1 thru 16	Tools normally furnished user to perform assigned mission
LEAD, TEST: (Probe)	replace				X		1 thru 16	
	repair	X						Limited to replacement of Probe Tip and Ground Clip Assembly. Tools normally furnished user to perform assigned mission
MODULES	replace				X		1 thru 16	
	overhaul					X	1 thru 16	
TEST SET SUBASSEMBLY: (Rotary Switch)	replace				X		1 thru 16	S790Z
	repair				X		1 thru 16	Replacement of resistors on switch

Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

(1) TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	(2) 1ST ECH	(3) 2ND ECH	(4) 3RD ECH	(5) 4TH ECH	(6) 5TH ECH	(7) TOOL CODE	(8) REMARKS
AN VRM-1 (continued)							
AMPLIFIER, HEWLETT PACKARD 460AB				*	*	1	Not for TOE 11-158. To be nomenclatured and standardized
AUDIO OSCILLATOR TS-382 U				*	*	2	
CABLE ASSEMBLY CX-3720/VRC				*	*	3	Not a test item. To be furnished by shop support
FREQUENCY METER AN/USM-26				*	*	4	
MOUNTING MT-1029/VRC				*	*	5	Not a test item. To be furnished by shop support
MULTIMETER, METER ME-26/U				*	*	6	
MULTIMETER, TS-352				*	*	7	
POWER SUPPLY PP-2359/U				*	*	8	
POWER SUPPLY, HEWLETT PACKARD 721A				*	*	9	Not for TOE 11-158. To be nomenclatured and standardized
RF SIGNAL GENERATOR AN/URM-25				*	*	10	
SIGNAL GENERATOR AN/USM-44				*	*	11	
TOOL KIT, RADAR AND RADIO REPAIRMAN TK-87/U				*	*	12	
TOOL KIT, SUPPLEMENTARY, RADAR AND REPAIR TK-88/U				*	*	13	
VOLTMETER, BOONTON MODEL 91CA				*	*	14	Not for TOE 11-158. To be nomenclatured and standardized
VOLTMETER, METER ME-30/U				*	*	15	
VOLTMETER TS-443/U				*	*	16	

By Order of Secretary of the Army:

G. H. DECKER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

DASA (6)
USASA (2)
CNGB (1)
Tech Stf, DA (1) except
CSigO (14)
Tech Stf Bd (1)
USCONARC (5)
USAARTYBD (1)
USAARMBD (2)
USAIB (1)
USARADBD (2)
USAAVNBD (1)
USA Abn Elct & SPWAR Bd (1)
USAATBD (1)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (3)
OS Base Comd (2)
LOG Comd (2)
MDW (1)
Armies (2)
Corps (2)
Instl (2)
Ft Monmouth (63)
USATC AD (2)
USATC Eng (2)
USATC Inf (2)
USATC FA (2)
USATC Armor (2)
USAOMC (2)
Svc Colleges (2)
Br Svc Sch (2)
Gen Dep (2) except
Atlanta (none)
Sig Sec, Gen Dep (5)
Sig Dep (12) except
Sacrament Sig Dep (17)
USA Trans Tml Comd (1)
Army Tml (1)
POE (1)
CSA (1)
WRAMC (1)
USAEPG (2)
AFIP (1)
AMS (1)
Army Pictorial Cen (2)
EMC (1)
Yuma Test Sta (2)
USA Strat Comm Comd (4)
USASSA (25)
USASSAMRO (1)
USARCARIB Sig Agcy (1)
USA Sig Msl Spt Agcy (13)
Sig Fld Maint Shops (3)
Def Log Svc Cen (1)
USA Corps (3)
JBUSMC (2)
Units org under fol TOE:
11-7 (2)
11-16 (2)
11-57 (2)
11-98 (2)
11-117 (2)
11-155 (2)
11-157 (2)
11-500 (AA-AE) (4)
11-557 (2)
11-587 (2)
11-592 (2)
11-597 (2)

NG: State AG (3).
USAR: None.
For explanation of abbreviations used, see AR 320-50.

* U.S. GOVERNMENT PRINTING OFFICE : 1990 0 - 262-912 (30527)

PIN : 020803-000